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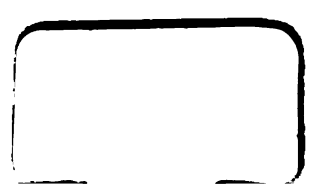
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United

ASTRONOMICAL

AND

METEOROLOGICAL OBSERVATIONS

MADE DURING

THE YEAR 1874,

AT THE

UNITED STATES NAVAL OBSERVATORY.

REAR-ADMIRAL C. H. DAVIS, U. S. N.,

SUPERINTENDENT.

PUBLISHED BY AUTHORITY OF THE

HON. SECRETARY OF THE NAVY.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
1877.

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ERRATA.

WASHINGTON OBSERVATIONS FOR 1868.

Page 3, one revolution of zenith-distance micrometer, for 15″.320+0″.068 ($r-30$) read 15″.320+0″.0068 ($r-30$).

WASHINGTON OBSERVATIONS FOR 1872.

Page 150, B. A. C. 221, apparent right ascension, for $42^s.87$ read $42^s.77$.
Page 228, mean of corrections to δ Draconis, for +0″.72 read −0″.72.
Page 249, B. A. C. 221, November 12, for $40^s.10$ read $40^s.30$; November 20, for $40^s.16$ read $40^s.26$; December 5, for $40^s.42$ read $40^s.32$; mean, for $40^s.262$ read $40^s.312$.
Page 271, B. A. C. 221, for $0^h\ 41^m\ 40^s.26$ read $0^h\ 41^m\ 40^s.31$.
Page 272, 38 Arietis, precession in right ascension, for $3^s.151$ read $3^s.251$.
Page 274, north-polar distance of α Columbæ, for 128° 8′ 38″.7 read 124° 8′ 38″.7; precession of 119 Tauri, for $3^s.540$ read $3^s.514$.
Page 283, precession of ξ Ophiuchi, for $3^s.471$ read $3^s.574$.
Page 285, precession of ρ^3 Sagittarii, for $3^s.410$ read $3^s.497$.

WASHINGTON OBSERVATIONS FOR 1873.

Page LXXX, Table XXIII, first line of third column, for $+.10_{24}$ read $-.11_{23}$.
Page 12, No. 5, one second should be added to seconds of transit, mean wire, and apparent right ascension.
Pages 28, 221, 245, observation of XV, 25, probably 1 rev. too small.
Pages 36, 37, 222, 245, the place of B. A. C. 5549 was computed with the wrong circle reading; it should have been 348° 26′. The place on pages 222 and 245 should be $16^h\ 29^m\ 36^s.12$ and 39° 35′ 24″.0, and the precession $+1^s.580$.
Pages 42, 219, 242, for XIII, 13, read Anonymous.
Pages 42, 223, 247, the right ascension of B. A. C. 5988 should be corrected by $-1^s.00$.
Pages 46, 220, 243, the places of B. A. C. 4847^1 and 4847^2 were computed with the wrong circle reading; it should have been 21° 52′.
Pages 46, 222, 246, the right ascension of XVI, 20, should be corrected by $+1^s.00$.
Page 49, XVI, 17, refraction, for +1′ 12″.6 read +2′ 12″.6.
Pages 49, 222, 246, the north-polar distance of XVI, 17, should be corrected by +1′ 0″.0.
Pages 58, 224, 248, the right ascension of B. A. C. 6659 should be corrected by $-10^s.00$.
Pages 60, 225, 249, the right ascension of B. A. C. 6879 should be corrected by $-10^s.00$.
Pages 66, 224, 247, the right ascension of XVIII, 14, should be corrected by $+1^s.00$.
Pages 72, 214, 236, Anonymous at $0^h\ 55^m+$ should be B. A. C. 281; the right ascension should be corrected by $-10^s.00$.
Page 74, No. 34, for B. A. C. 7846 read Anonymous.
Page 75, B. A. C. 7820, circle division should be 350° 0′.
Page 229, B. A. C. 7820, north-polar distance should be 41° 10′ 0″.5.
Page 253, B. A. C. 7820, north-polar distance should be 41° 10′ 0′.1.
Page 82, B. A. C. 6551, apparent right ascension, for $19^h\ 1^m\ 54^s.58$ read $19^h\ 2^m\ 4^s.58$; miscellaneous corrections, for $-1^s.76$ read $-0^s.76$.
Pages 224, 248, the right ascension of B. A. C. 6551 should be corrected by $+10^s.00$.
Page 84, No. 21, instrumental corrections, for $+9^s.43$ read $+9^s.42$; B. A. C. 6623, miscellaneous corrections, for -1^s read $-0^s.74$.
Pages 224, 248, B. A. C. 6623, right ascension should be corrected by $+0^s.94$.
Pages 86, 227, 250, for B. A. C. 7259 read Anonymous.
Page 86, B. A. C. 7377, miscellaneous corrections, for $-1^s.41$ read $-1^s.49$.
Page 87, B. A. C. 7377, miscellaneous corrections, for +23″.6 read +20″.8.
Page 96, B. A. C. 7448, miscellaneous corrections, for $-3^s.04$ read $-1^s.06$.
Pages 228, 251, the right ascension should be corrected by $+1^s.98$.
Page 98, B. A. C. 7636, miscellaneous corrections, for $-1^s.80$ read $-1^s.24$.
Page 99, B. A. C. 7636, miscellaneous corrections, for +30″.7 read +25″.0.
Pages 100, 229, 252, B. A. C. 7778, reject north-polar distance.

Page 100, Neptune, reject entire observation; not the planet.
Page 185, 51 Cephei, S. P., Div., Flex., etc., for +0″.32 read −0″.32.
Page 187, 1 Draconis, S. P., Div., Flex., etc., for +0″.36 read −0″.36.
Page 213, XXIII, 21, November 29, for $19^s.20$ read $19^s.90$.
Pages 217, 239, for Weisse 1656 read Weisse (2) 1656; the right ascension should be $6^h\ 55^m\ 55^s.36$.
Pages 224, 248, B. A. C. 6659, for $13^s.98$ read $3^s.98$.
Page 227, B. A. C. 7377, October 7, for $34^s.20$ read $34^s.12$, and for 11″.1 read 8″.3; mean, for $34^s.220$ read $34^s.180$, and for 11″.95 read 10″.55.
Pages 228, 252, B. A. C. 7636, for $21^h\ 48^m\ 50^s.57$ read $21^h\ 48^m\ 51^s.13$.
Page 228, B. A. C. 7636, for 34° 23′ 15″.5 read 34° 23′ 9″.8.
Page 251, B. A. C. 7377, for $21^h\ 8^m\ 34^s.22$ read $21^h\ 8^m\ 34^s.18$, and for 30° 32′ 11″.3 read 30° 32′ 9″.9.
Page 252, B. A. C. 7636, for 34° 23′ 14″.9 read 34° 23′ 9″.2; B. A. C. 7555, annual precession, for 2 .963 read $1^s.982$.
Page 229, Groombridge 3820, for 21^m read 23^m.
Page 246, B. A. C. 5798, for 65° 38′ 6″.7 read 65° 36′ 6″.7.
Page 249, B. A. C. 6959, annual precession, for $4^s.373$ read $1^s.671$.
Page 261, Jupiter, March 31, apparent right ascension of center, for $35^s.05$ read $35^s.40$; correction to American Ephemeris, for $+0^s.30$ read $+0^s.65$.

WASHINGTON OBSERVATIONS FOR 1874.

Page 25, Nos. 35, 36, 37, and 38, the zenith-point correction should be 71″.9; the apparent zenith distance south and north-polar distance should be corrected by −2″.4; Nos. 35 and 38, the miscellaneous correction should be −1″.3 and +0″.7.
Page 49, No. 43, the apparent zenith distance south should be 71° 57′ 48″.0; refraction, 2′ 56″.8; apparent north-polar distance, 123° 7′ 6″.0; miscellaneous correction, −14″.4.
Page 50, No. 42, for B. A. C. 4758 read Groombridge 2097.
Page 56, No. 13, for XIII, 6, read XIII, 5.
Page 81, Nos. 40 to 45, the zenith-point correction, apparent zenith distance south, apparent north-polar distance, and miscellaneous corrections should be corrected by +2″.5.
Page 87, Nos. 3 to 11, the zenith-point correction, apparent zenith distance south, apparent north-polar distance, and miscellaneous corrections should be corrected by +0″.3.
Page 90, No. 1, for B. A. C. 6021 read μ Herculis; the miscellaneous correction should be $-0^s.05$.
Page 91, No. 1, the miscellaneous correction should be −1″.4.
Page 102, No. 22, the marginal note should be erased.
Page 103, No. 22, the micrometer revolutions should be 27; apparent zenith distance south, 348° 56′ 12″.3; apparent north-polar distance, 40° 2′ 22″.5.
Page 104, Nos. 8 and 49, for B. A. C. 6763^1 read B. A. C. 6763; No. 9, for B. A. C. 6763^2 read B. A. C. 6764.
Page 106, No. 1, for B. A. C. 6763^2 read B. A. C. 6764.
Page 128, No. 24, for B. A. C. 6763^1 read B. A. C. 6763; No. 25, for B. A. C. 6763^2 read B. A. C. 6764.
Page 141, Nos. 41 to 46, the zenith-point correction, apparent zenith distance south, apparent north-polar distance, and miscellaneous corrections should be corrected by +0″.7.
Pages 141 and 143, Nos. 47 to 6, the zenith-point correction, apparent zenith distance south, and apparent north-polar distance should be corrected by −1″.7; the miscellaneous corrections should be +18″.9, +1″.4, +1″.4, −0″.6, −0″.8, −2″.7, −0″.5, −2″.1, +1″.9, +26″.3.
Pages 153 and 155, Nos. 6 to 20, the zenith-point correction, apparent zenith distance south, and apparent north-polar distance should be corrected by +1″.0; the miscellaneous corrections to the American Ephemeris stars should also be corrected by +1″.0.
Page 173, Nos. 39 to 48, the zenith-point correction, apparent zenith distance south, apparent north-polar distance, and the miscellaneous corrections should be corrected by −2″.5.
Page 175, No. 1, the zenith-point correction should be 77″.0; the apparent zenith distance south, apparent north-polar distance, and the miscellaneous corrections should be corrected by +0″.5; Nos. 2 and 3, the zenith-point correction, apparent zenith distance south, apparent north-polar distance, and the miscellaneous corrections should be corrected by −2″.5.
Page 318, μ Herculis, the correction for July 17 should be $-0^s.05$; the mean of the corrections should be $-0^s.006$.

APPENDIX II.

Page 10, fifth line from bottom, for $0^s.036$ read $0^s.066$; second line from bottom, for $2^h\ 19^m\ 47^s.41$ read $2^h\ 19^m\ 47^s.51$.

REPORT OF THE SUPERINTENDENT OF THE OBSERVATORY TO THE CHIEF OF THE BUREAU OF NAVIGATION.

UNITED STATES NAVAL OBSERVATORY,
Washington, October 17, 1874.

SIR: I have the honor to submit the following report of the Observatory for the current year:

ASTRONOMICAL WORK.

The Great Equatorial.—Shortly after the date of the last annual report, the 26-inch Equatorial, ordered from Alvan Clark & Sons, in 1870, was received and successfully mounted. Its performance has been, on the whole, eminently satisfactory, the defects being principally such as seem necessarily incident to so large an instrument, or such as are to be expected in a construction now tried for the first time. A want of exact achromatism is a defect in all refracting telescopes, which there is no known method of obviating, and which increases with the size of the glass. The effect of changes of temperature on the glass is something quite marked, but becomes troublesome only when, after a comparatively warm day, the glass is first exposed to the cool air of evening. Observations may then be interfered with for half an hour or longer.

The diurnal movement of the telescope, necessary to make it follow an object, has hitherto been given by means of a small water-wheel in the cellar, which has proved much too powerful for the delicate regulating-apparatus. Alterations to remedy this are about being made by the contractors.

The most important work of this instrument has been micrometric measures of the satellites of Saturn, Uranus, and Neptune.

The satellites of the two latter, which are among the most difficult objects in the heavens, have been observed with an accuracy never before approached, and these observations will lead to a more certain determination of the masses of the respective planets. Work has also been commenced on a list of the closest and most difficult double stars. Professor Newcomb, with Professor Holden as assistant, has been in charge of this instrument since its mounting.

The work of the old Equatorial has been temporarily suspended, in consequence of the absence of Professor Hall to observe the transit of Venus. It is still used for the observations of occultations in connection with the observers of the transit of Venus.

The Transit Circle.—Until May 29, 1874, this instrument was in charge of Pro-

fessor William Harkness, assisted by Professor J. R. Eastman, Professor E. S. Holden, and Assistants Edgar Frisby and Ormond Stone. Professor E. S. Holden was detached November 17, 1873, and Assistant A. N. Skinner was assigned to duty on this instrument on the same day On June 1, Professor J. R. Eastman was placed in charge of the Transit Circle, with Messrs. Frisby, Skinner, and Stone assistants.

This instrument has been employed in observations of the sun, moon, and planets, and of a large list of miscellaneous stars, whose places were required, first, for the reduction of observations made with the equatorial; second, as zero-points for the formation of a catalogue from the zone-observations made here in the years 1846 to 1849; third, for the use of Lieutenant G. M. Wheeler, of the United States Engineers, in the reduction of the zenith-telescope work of his parties engaged in surveying and exploring the Western Territories.

Observations of "Nautical Almanac" stars have been mostly limited to those necessary for the determination of time and azimuth. Several observations of Coggia's comet were made in June and July.

The volume of observations for 1872 is daily expected from the press, and a portion of the Transit Circle work for 1873 will be in the hands of the printer by the 25th instant.

During the winter, two series of clock-signals were exchanged with parties of Coast Survey observers, to determine the longitude of Key West, and Savannah, Ga. The computation of this work at the Observatory is nearly completed.

The Transit Circle observing-room is in a very unsatisfactory condition. It is impossible to obtain proper ventilation in the hot days of midsummer; the roof-shutters do not work well; and, in spite of frequent repairs, they leak in every heavy rainstorm; the track for the reversing-carriage is not properly laid; the arms of the reversing-carriage, which are half an inch too near together, require some changes; and the protection of the thermometer, on which the computation for refraction depends, is such that there is frequently an abnormal daily range of 5° or 6°.

It will require at least $1,500 to put this room in good order.

The Mural Circle.—Professor M. Yarnall has been engaged in observing with the Mural Circle those stars in the general catalogue whose places were not, as he supposed, sufficiently well determined. They were, for the most part, stars observed but once with the Prime Vertical Transit Instrument, and some others, for whose more accurate determination further observations are desirable. The catalogue being thought by many astronomers to have great value, it is desirable to issue a new edition, with such additions as the number of years elapsed since its publication would give us. To this end, it is necessary to observe with the Mural Circle for about another year, and then two years with the Transit Instrument, will give the catalogue great completeness. As this is the only work which Professor Yarnall's years of service will enable him to complete, he desires to carry it forward with energy.

He has reduced all his observations up to date; he has also compared the catalogue with Argelander, Weisse, and other catalogues, and endeavored to root out all the errors, clerical or others, which could be found. He has read the proofs for the volume for 1872, which is daily expected from the press, and has prepared the work of 1873, which is almost entirely ready for printing.

In all his labors, he has had the assistance of Professor Lockwood, who has checked all his computations, and thereby rendered them of more value, besides copying the work and preparing it for the press.

Theory and Tables of the Moon.—This work, which has been interrupted for more than a year by the construction of the great telescope and the preparations to observe the transit of Venus, has been recommenced by Professor Newcomb.

A renewal of the small appropriation for computations is therefore asked for, which, it is expected, will suffice to prepare the first and second parts of the work for publication.

Transit of Venus.—The Commission authorized by section 1 of the act of Congress approved March 3, 1871, entitled "An act making appropriations for the naval service for the year ending June 30, 1872, and for other purposes", and by section 1 of the act approved June 10, 1872, entitled "An act making appropriations for sundry civil expenses of the Government for the fiscal year ending June 30, 1873, and for other purposes", to expend appropriations for the transit of Venus, held its first meeting on the 22d of July, 1872, when it was duly organized.

Under the specific action and direction of this Commission, from time to time the requisite instruments have been selected and made; the parties have been constituted, the stations adopted, and the work of preparation and instruction has been carefully matured and strictly executed.

At the meeting of the 9th of February, 1874, it was decided to invite Dr. Henry Draper, of New York, to take charge of the work of putting into successful execution the various operations necessary for photographing the transit of Venus by the methods decided upon by the Commission, and of instructing the parties in those operations Dr. Draper accepted this arduous duty, and performed it in a manner which commands the gratitude and respect of the Commission. Dr. Draper declined to receive any compensation or re-imbursement for his invaluable services and for his unavoidable persona. expenses while traveling and residing in Washington on the service of the Commissionl

The system of practice was fully carried out, and the several parties destined for the observation of the transit of Venus in both hemispheres left the United States fully qualified in all respects to perform their duties.

Instructions for conducting the scientific operations of the parties were prepared by Professor Newcomb, printed, and freely distributed.

Meteorological Department.—This department has been in charge of Professor Eastman; and the usual observations with the barometer, and the dry, wet, and solar thermometers have been made at 0^h, 3^h, 6^h, 7^h, 9^h, noon, 3^h, 6^h, 9^h, on each day.

The observations in 1872 have been printed only in the large annual volume; but, in order to accommodate our large number of meteorological exchanges, the observations of 1873 have already been printed, and 200 extra copies obtained to supply immediately the wants of our meteorological correspondents. These extra copies of the meteorological work will enable the Observatory to save the expense of an equal number of annual volumes in exchanging with those who furnish us only with meteorological data, and who are not interested in the bulky volume of astronomical data, which has hitherto been furnished them.

Chronometers.—There are at present forty-three chronometers under comparison, of which twenty-five are ready for issue; the remainder are under trial. Twenty-one have been sent to Messrs. Negus for repairs, and eight others are awaiting an opportunity to be sent for that purpose. Sixty-eight have been received from Messrs. Negus, repaired and cleaned. During the year, eighty-seven have been received from all sources, and sixty-four issued for use. The latter number includes eight break-circuit sidereal and twenty-eight mean-time chronometers issued to the different parties sent out to observe the transit of Venus. Twenty have been condemned and withdrawn from service by order of the bureau, four of which were for irregularity of performance, and sixteen for age.

Messrs. Negus, of New York, have, for the past year, done the repairing of such chronometers as have needed it, and have at the present twenty-nine box and two pocket chronometers undergoing repairs, together with nineteen watches, sent to them for repairs by order of the bureau. The officers at present in charge of these are Commander A. T. Snell, from the 13th instant; Lieutenant-Commander C. H. Pendleton, from December 8, 1873; and Lieutenant C. H. Arnold, from April 13, 1874. Captain A. W. Johnson was detached June 22, Lieutenant-Commander S. W. Terry July 10, and Lieutenant L. G. Palmer August 15.

During the absence of Mr. W. F. Gardner, instrument-maker, who is attached to Professor Hall's party to observe the transit of Venus, such of his duties as pertain to chronometers and batteries have devolved upon his assistant, Mr. George Anderson.

The routine duties connected with the care of chronometers have been fully described by Captain A. W. Johnson, in his report of 1873.

The Library.—During the year there have been added to the library two hundred and three volumes on the subjects of Astronomy, Magnetism, Meteorology, Geodesy, Mathematics, and others more or less directly related to the purposes of the Observatory, besides a much larger number of pamphlets presented by learned societies, or their respective authors. Much the larger proportion of all these has accrued to the library, as heretofore, by the exchange of its own publications, which are thus building up a collection promising to excel in its scientific character most, if not all, found elsewhere in this country. These exchanges are maintained by the prompt distribution, at home and abroad, chiefly of the annual volume of our Astronomical and Meteorological Observations. In the distributions of the volume for 1871, received on the 8th of January last, the Observatory has been again placed under obligations to the resident legations of foreign countries, to our Department of State, and largely to the Smithsonian Institution.

Proposed erection of quarters for observers.—One of the most serious wants of this establishment is that of quarters for the observers. At the present time, in order to keep up observations with all due regularity, the officer is obliged to leave his bed at any and all hours of the night and walk a distance ranging between half a mile and two miles, much of the way through a thinly-settled portion of the city. Few can continue this exhausting practice for any considerable length of time. The difficulty of procuring near the Observatory a residence which is, at the same time, cheap, healthful, and decent, is such that only two of the nine observers reside within a mile of it, while two reside at a distance of two miles. There is, moreover, no street-rail-

road within half a mile. I know of no observatory in the world so difficult of access in which quarters for the observers are not supplied, and I am persuaded that there is none such.

It is proposed to commence with quarters for the officers in charge of the great telescope and the meridian observations, which will supply the principal want in question. If best to begin with a single house, then one for the officer in charge of the great telescope should be first built.

I have the honor to be, very respectfully, your obedient servant,

C. H. DAVIS,
Rear-Admiral, Superintendent.

Commodore DANIEL AMMEN, U. S. N.,
Chief of Bureau of Navigation, Navy Department.

GENERAL INTRODUCTION.

The observatory was originally built as a depot of charts and instruments for the Navy, and was fully described in a "Report on the Plan and Construction of the Depot of Charts and Instruments, with a description of the instruments", etc., made by Lieutenant James M. Gilliss, U. S. N., to the Secretary of the Navy in February, 1845, and published as Senate Document No. 114, Twenty-eighth Congress, second session. A more general description, illustrated by plans and drawings, may be found in the volumes of Washington Observations for 1845 and 1865.

Position of the observatory.—The latitude deduced from observations with the Mural Circle in 1845 and 1846 was $+38^\circ\ 53'\ 39''.25$;[1] and that value has been used in the reduction of all observations with the Mural Circle down to the present time. The observations made with the same instrument from 1861 to 1864 inclusive give a latitude $+38^\circ\ 53'\ 38''.8$;[2] which has been used in the reduction of observations with the Transit Circle. The final north-polar distances of objects observed with the Transit Circle in any year depend upon all the observations of circumpolar stars made during that year.

The longitude and the latitude of the observatory are reckoned from the center of the old dome, which is built over the center of the main building.

The telegraphic determination of the longitude from Greenwich depends almost entirely upon the work of the United States Coast Survey. The following data are obtained from their official reports:

In August, 1872, the longitude was given as—

$$5^h\ 8^m\ 12^s.06 \pm 0^s.23,$$

and in August, 1873, it was announced by the assistant in charge of the office that the Coast Survey had made three independent determinations, with the following results:

	h.	*m.*	*s.*
In 1867 - - - - - - -	5	8	12.11
1870 - - - - - - -			12.16
1872 - - - - - - -			12.10

[1] Washington Observations, 1845, Appendix, p. 116.

[2] Washington Observations, 1864, Introduction, p. xliv.

In interpolating tabular positions of the moon and planets, the longitude of the observatory is assumed to be $5^h\ 8^m\ 12^s.0$.

Since the observatory was built, there have been several changes in the positions of its instruments; and, in order to facilitate comparisons of the work done with them at different times, their co-ordinates, measured from the center of the old dome, are given in the following table. The sign + before a co-ordinate indicates that the instrument is north or west of the center of the dome, and the sign — indicates that it is south or east of that point.

Instrument.	Diff. of Latitude.		Diff. of Longitude.	
	Feet.	"	Feet.	s.
Transit:				
January, 1845, to September 2, 1864 . .	0.0	0.00	+ 41.0	+ 0.035
Since October 1, 1864.	0.0	0.00	− 42.9	− 0.036
Mural Circle:				
January, 1845, to September 15, 1845 . .	0.0	0.00	+ 32.0	+ 0.027
Since October 1, 1845.	0.0	0.00	− 33.9	− 0.029
Meridian Circle:				
January, 1845, to August, 1864	0.0	0.00	− 42.9	− 0.036
Prime Vertical Transit:				
Since January, 1845	− 45.4	− 0.45	0.0	0.000
Transit Circle:				
January 1, 1866, to June 5, 1869. . . .	0.0	0.00	+ 38.4	+ 0.032
Since October 1, 1869	0.0	0.00	+ 77.8	+ 0.066
26-inch Equatorial (center of dome):				
Since November 15, 1873	−120.1	− 1.19	0.0	0.000

Arrangement of work.—The system adopted at the time of the revival of the astronomical activity of this establishment in 1861 is still continued. Under this system, the observations with each instrument are directed by the officer having it in charge, who is held responsible for the proper performance of the work, and prepares the descriptions, explanations, and discussions of the observations contained in the annual volumes.

During the year 1874, the details for duty were as follows:

The Transit Circle was under the direction of Professor William Harkness, U. S. N., assisted by Professor J. R. Eastman, U. S. N., and Assistants E. Frisby, O. Stone, and A. N. Skinner, from January 1 to May 29. On June 1, Professor J. R. Eastman, U. S. N., was placed in charge of the instrument, with Messrs. Frisby, Stone, and Skinner as assistants.

The Prime Vertical Transit was not used during the year.

The 9.6-inch Equatorial was under the direction of Professor A. Hall, U. S. N., until June 30, and on Oct. 1 it was placed under the direction of Professor Eastman.

The Mural Circle and Transit were under the direction of Professor M. Yarnall, U. S. N., who was assisted in computing by Professor H. H. Lockwood, U. S. N.

The 26-inch Equatorial was under the direction of Professor S. Newcomb, U. S. N., assisted by Professor E. S. Holden, U. S. N.

In the Department of Chronometers, which includes the dropping of the time-ball at noon, and the transmission of time-signals to the city through the police-telegraph, the following officers were on duty for the periods specified, namely: Commander A. W. Johnson, U. S. N., from January 1 to June 22; Commander A. T. Snell, U. S. N., from September 13 to November 6; Lieutenant-Commander S. W. Terry, U. S. N., from January 1 to July 6; Lieutenant-Commander C. H. Pendleton, U. S. N., from January 1 to December 31; Lieutenant L. G. Palmer, U. S. N., from January 1 to August 15; Lieutenant C. H. Arnold, U. S. N., from April 13 to December 31; Lieutenant L. C. Logan, U. S. N., from December 15 to December 31; Lieutenant R. Wainwright, from September 5 to September 10.

The meteorological observations were made, under the supervision of Professor J. R. Eastman, U. S. N., by the watchmen of the establishment, Messrs. Thomas Hays, Dennis Horigan, and Nicholas Cahill.

Mr. W. F. Gardner, instrument-maker, executed all necessary repairs and alterations of the instruments and apparatus of the observatory.

Mr. Thomas Harrison, clerk and disbursing officer, had charge of the official correspondence and accounts of the establishment.

The observatory, being a naval establishment, is under the general supervision of the Bureau of Navigation of the Navy Department.

THE TRANSIT CIRCLE.

During the year 1874, the regular observations with the Transit Circle were confined to five classes of objects:

(1) Stars of the American Ephemeris, for the determination of clock corrections, azimuth corrections, and the corrections to the zenith point and to the assumed latitude.

(2) Sun, moon, and planets.

(3) Comparison stars employed in observations with the 9.6-inch Equatorial.

(4) Stars selected for standard stars in the formation of a catalogue from the zone observations made here from 1846 to 1849.

(5) Stars used for latitude determinations by parties attached to the expedition of Lieutenant G. M. Wheeler, United States Engineers, in charge of explorations and surveys west of the one hundredth meridian.

Several observations of Coggia's comet were made in June and July.

In October, clock-signals were exchanged on five nights with Lieutenant Wheeler's observatory at Ogden, Utah, to determine the longitude of that station. A special report on that work will be found in Appendix II of this volume.

From January 1 to June 1, this instrument was in the charge of Professor W. Harkness, U. S. N., and for the remainder of the year was under the direction of Professor J. R. Eastman, U. S. N.

No changes have been made in the instrument during the year, and no funds were available for the repair of the roof and shutters of the observing-room.

In the latter part of June, a small brick pier was built near the eastern wall of the observing-room, and, on July 1, the counting-clock was transferred to this pier from the southern collimator pier, where it had been mounted since the Transit Circle was moved to the present observing-room. The gas-burner for the illumination of the face of the clock, while it was mounted on the collimator pier, was almost in the meridian of the Transit Circle, so that all southern stars with a zenith distance greater than 40° were observed at night through a column of air affected by the heat of the burner.

THE OBSERVING-ROOM.

The interior of the observing-room, which has been occupied since February 2, 1870, measures 40 feet from north to south and 28 feet 3 inches from east to west. Its height, from the floor to the under side of the shutters which close the opening in the roof, is 23 feet 2 inches at the ridge and 19 feet 6 inches at the eaves. The ridge

of the roof extends east and west. The opening in the roof has a width of 3 feet 8 inches, and extends downward, in the north and south walls, to within 7 feet 4 inches of the floor. The portion in the roof is closed by means of four sliding shutters, while that in the north and south walls is closed by double doors.

The inside of the walls of the frame on the east, south, and west sides is covered with tin, and the outside of the frame is protected from the direct rays of the sun by light wooden louver work. The northern wall is covered on the outside with tin. The outside is painted white and the inside light blue.

The latitude of the Transit Circle is the same as that of the center of the central dome of the observatory, but in longitude it is 77.8 feet = 0s.066 west of that point.

DESCRIPTION OF INSTRUMENTS.

THE TRANSIT CIRCLE.

A detailed description of the Transit Circle, together with an account of the investigation of its constants, may be found in the Washington Observations for 1865. The following condensed description will be sufficient to render intelligible the explanation of the observations and their reduction.

This instrument was made by Pistor & Martins, of Berlin, in 1865. It is of the reversible pattern, and is mounted upon two massive marble piers, with its axis 8 feet 2 inches above the floor. The telescope has a clear aperture of 8.52 inches, and a focal length of 12 feet and 0.7 of an inch. The axis is cast in a single piece, into which the steel pivots, 2.09 inches in diameter and 1.7 inch long, are screwed. The Y's are of gun-metal, and the bearing-surfaces are 0.28 inch wide. The distance between the centers of the bearing-surfaces is 3 feet 9.1 inches. The telescope-tube is made in two similar parts, which are bolted to the opposite sides of the cube which forms the central portion of the axis. This cube measures 16.64 inches on the edge.

Two circles, identical in form and size, are attached to the extremities of the axis. Each has ten radial arms, is cast in a single piece weighing about eighty pounds, is 45.3 inches in diameter at the outside edge, and 43.4 inches at the graduation. The circle on the clamp-end of the axis, known as circle A, has inlaid upon its face two bands of silver, each 0.13 of an inch wide, the inner one of which is graduated to every 2′, and the outer one to every 10′. The other, known as circle B, has inlaid upon its face a single band of silver 0.13 of an inch wide, which is graduated to every 2′. The graduation on each of these circles is numbered, from left to right, from 0° to 360°, and, as they face in opposite directions, when the telescope is moved in zenith distance, the reading of one circle increases while that of the other decreases. The circles are attached to the axis in such a manner that they may be adjusted to bring any desired divisions under the microscopes in a given position of the telescope. Each pier carries four micrometer microscopes placed at the extremities of two diameters, which intersect at right angles, and each of which makes an angle of 45° with the vertical. They are attached by means of metal arms, covered with wood, to the brass disk, on the face of the pier, which supports the Y's. The microscopes on the western pier are marked I, II, III, IV; those on the eastern pier, V, VI, VII, VIII. The readings of the former

diminish and those of the latter increase as the telescope moves from the zenith toward the south. These microscopes magnify about forty-five diameters; one revolution of their screws is equal to 30″, and their micrometer-heads are divided to 0″.5. Each microscope-micrometer is furnished with two parallel threads about 12″ apart, and the reading is made when the image of the division on the limb of the circle appears to be exactly midway between the threads.

In addition to the microscopes already mentioned, each pier carries another, which is employed as a pointer for setting the telescope by means of the coarse graduation on circle A. These microscopes magnify twenty-three diameters, and are placed at the extremities of horizontal radii to the circles; that on the western pier being north, and that on the eastern pier south of the axis. The setting microscope in actual use is always the one at the clamp end of the axis.

In the eye-piece of the telescope is a fixed reticule of fifteen vertical and two horizontal threads. The latter have a space of about 8″ between them, and are inserted principally to mark the center of the field. The notation and the approximate equatorial intervals between each vertical thread, and the mean of sets B and D, and C_2, C_3, and C_4, are as follows:

	s.		s.		s.
I	36.8	C_1	4.1	D_1	8.2
II	24.5	C_2	2.0	D_2	9.7
III or B_1	12.2	IV or C_3	0.0	V or D_3	12 2
B_2	9.7	C_4	2.0	VI	24.5
B_3	8.2	C_5	4.1	VII	36.8

The threads B_1 to B_3 are known as set B; C_1 to C_5 as set C; and D_1 to D_3 as set D. The thread on the western side of the field is always known as I; therefore, when the instrument is reversed, the notation of the threads is reversed.

The eye-piece also contains a right-ascension and a zenith-distance micrometer, in each of which the readings increase as the threads move from the micrometer-head The right-ascension micrometer is provided with a single vertical thread, and is employed in determining the collimation constant, and sometimes in observing the transit of close circumpolar stars when clouds prevent observations at the fixed threads. The value of one revolution of the micrometer-screw is 1ˢ.024. The zenith-distance micrometer is furnished with four horizontal threads, two of which are about 3″ apart, and the center of the space between them is regarded as the standard middle thread. The value of one revolution of this micrometer-screw is 15″.312. The other threads are placed at a distance of about 2′ 33″ on either side of the middle threads; that nearest the head of the micrometer being called thread A, and the other thread B. In observing southern stars, the micrometer-head is below the eye-piece if the clamp is west, and above it when the clamp is east. An increase of micrometer reading is subtractive from the reading of circle A, and additive to that of circle B. A self-registering apparatus is attached to the head of the micrometer-screw, in such a manner as to enable the observer to obtain a record of at least four bisections without removing the eye from the eye-piece.[1]

[1] See Astronomische Nachrichten, No. 1493, p. 77.

The illumination of the field of view is so arranged that the threads can be shown either dark on a bright field or bright on a dark field. In the case of bright-field illumination, the color can be varied from deep red to dark blue.

The instrument is provided with five positive eye-pieces, magnifying respectively 135, 158, 186, 279, and 395 diameters. That magnifying 186 diameters is the one generally used.

Collimators.—The Transit Circle is provided with two collimators, having object-glasses of 35.2 inches focal length, and 2.1 inches clear aperture. The eye-pieces have a power of 67. The collimators are mounted on sandstone piers, the one north and the other south of the Transit Circle, and 14.8 feet from the center of the instrument. The field of view of collimator A contains a vertical thread crossed at its middle point by a horizontal thread. The field of view of collimator B contains a fixed vertical thread, and two intersecting threads, movable by a micrometer-screw. Each of the intersecting threads makes an angle of 12° with the vertical. Collimator A is usually mounted on the south pier. Two levels are provided by which the collimators may be placed horizontal.

Each side of the central cube of the Transit Circle telescope is pierced with a circular opening, 2.3 inches in diameter, which is closed by a brass cap. By removing the caps, and setting the telescope vertical, the threads of either collimator may be seen from the other.

The Standard Sidereal Clock.—The sidereal clock, used in connection with the Transit Circle, is Kessels No. 1324. In order to provide against the effects of sudden changes of temperature, the clock, which is situated in the room adjoining the observing-room on the eastern side, is inclosed in a vault of heavy masonry lined with tin, and, to prevent the works of the clock from rusting, the dryness of the air is maintained by keeping a fire in the clock-room throughout the year. The clock has a gridiron pendulum, and is connected with the galvanic system of the observatory by means of a platinum point which projects from about the middle of the pendulum-rod, and at each vibration lightly touches the surface of a small globule of mercury and closes the circuit. The clock is connected with the chronograph in the usual way.

The rate of the clock is controlled by means of small weights, which can be placed in a small cup attached to the pendulum-rod.

The Counting Clock.—This clock is attached to a brick pier near the eastern wall of the observing-room. It was made by Parkinson and Frodsham, of London, and has a mercurial pendulum. Its rate is controlled by means of small weights placed on the top of the jar of mercury, and it is kept within less than half a second of the Kessels clock.

This clock contains a delicate spring, furnished with a platinum point, resting upon a small plate of the same metal; the whole so arranged that at the beginning of each minute an arm attached to the arbor of the seconds hand raises the spring and separates the point from the plate for nearly one second. Wires are attached to this apparatus so that if desired it may be included in the same circuit with the Kessels clock, when, if the beats of the two clocks are nearly in coincidence, the mark for the sixtieth second of the Kessels clock will be omitted on the chronograph.

The Standard Mean Time Clock.—This clock is attached to a stone pier in the

chronometer-room, but the officer in charge of the Transit Circle is responsible for furnishing its errors and rates. It was made by Parkinson and Frodsham, of London, has a mercurial pendulum, and its rate is controlled by means of small weights placed on the jar containing the mercury. It is compared with Kessels No. 1324 by causing their beats to be recorded on the same chronograph, generally until a coincidence is obtained. This clock is considered the best in the observatory.

The Chronograph.—This instrument is mounted on a wooden stand near the eastern wall of the observing-room. It is a modified form of the Hipp chronograph, in which regularity of motion in the train is secured by a spring making ·132 vibrations a second. The barrel of the chronograph is 6.37 inches in diameter, 13.5 inches long, and revolves once in a minute A sheet of paper fastened on the chronograph barrel by thin, metallic springs is sufficient to contain the record of two hours' continuous work, and the train requires winding only when the paper is changed. The clock-signals and those of the observer are recorded by a single pen. The armature of the magnet, which controls the pen, is provided with repeating-points for use in sending signals to distant stations when determining differences of longitude by telegraph. The pen-carriage is moved forward by an endless screw, but may be lifted from its bearings and moved backward or forward so that the pen may be placed upon any desired part of the chronograph sheet. The chronograph stops when the sheet is full. The record is made on paper of the quality of ordinary writing-paper with an ink that does not freeze at 0° F. The ink is made in the following proportions:

Water - - - - - - - - - - - - -	4 fluid ounces.
Alcohol - - - - - - - - - - - -	2 fluid ounces.
Concentrated Glycerine - - - - - -	1 fluid drachm.
Crystallized Aniline Blue - - - - - -	40 grains.

This ink requires thorough filtering. The pen is of glass, and the lower part of the bulb is drawn out to a fine capillary tube, so that, when ink is placed in the bulb and the pen allowed to rest its whole weight on the paper, it produces a fine sharp line as the barrel revolves.

The Barometer and Thermometer.—The barometer is of the cistern form, and is suspended on the eastern wall of the observing-room, near its northeastern corner. This instrument has a tube about 0.3 of an inch in diameter, and the graduation may be read by means of a vernier to 0.01 of an inch. The thermometer has a Fahrenheit scale, and is graduated from $-36°$ to $+157°$. It is suspended outside the north front of the observing-room, eleven feet above the surface of the ground, and is protected from radiation by a double shield of tin.

OBSERVATIONS WITH THE TRANSIT CIRCLE.

Position of Axis.—The system of observations with this instrument is based on the plan of reversing the axis at the beginning of each year, and at the same time shifting the position of circle B on the axis so that the north-polar distances of the same object will depend on different circle-divisions in different years. During the year 1874, the clamp end of the axis was west.

Arrangement of Work.—During the year 1874, there were four observers attached

to the Transit Circle, who made all the observations and computations except such computations and copying as could be obtained for less than one thousand dollars. As a rule, each observer is held responsible for all the observations to be made during an "observing-day" of twenty-four hours, beginning at 9 a. m.

The usual observing-hours are from 9 a. m. to 3 p. m. and from 8 p. m. to an hour late enough to observe whatever small planets may be near opposition. It is a rule to observe the moon whenever it can be seen at time of transit, and on Sundays the only observations regularly made are those of the moon and of stars necessary for the determination of time and instrumental constants.

Generally, in clear weather, two groups of observations are made in each observing-day; the mean right ascension of one group occurring about noon, and that of the other nearly twelve hours after. Occasionally there are two groups at night. The azimuth constant is considered invariable throughout the "observing-day"; but the collimation and level constants and the zenith-point correction are determined near the middle of every group of observations. The number of observations to be obtained in an "observing-day" has not been fixed, for, with rare exceptions, the zeal of the observers leaves no necessity for fixing a minimum limit.

Method of Observing.—A galvanic current, closed by the Kessels clock, works the chronograph-pen, and all observations of time are made by the aid of its recorded beats. Therefore, the first duty of the observer is to put the counting-clock in coincidence with the Kessels. Then the counting-clock serves to indicate the second corresponding to each beat of the chronograph-pen, and, when included in the clock circuit, it also indicates the beginning of each minute on the chronograph by causing the pen to omit the mark corresponding to the sixtieth second.

The general method adopted in using the Transit Circle is to bring the proper divisions of circle B as nearly as possible under the zeros of its micrometer microscopes, and then to measure with the zenith-distance micrometer of the telescope the distance between its zero-point and the image of the object observed. The subdivision of the intervals between consecutive divisions on circle B is thus thrown entirely on the zenith-distance micrometer, and as the arc measured by the micrometer microscopes rarely exceeds 10″ their errors of run are neglected. The graduation of circle B is better than that of circle A, and is consequently employed in all measures of zenith distance. Circle A is used only as a setting circle, to indicate the degrees and minutes of zenith distances, and its position on the axis is never changed. If a collimating eye-piece is attached to the telescope, its zenith-distance micrometer set at 35 revolutions, and the instrument turned until the central micrometer-wires coincide with their own images reflected from the surface of mercury, the reading of the horizontal microscope of circle A will be 179° 56′, and some divisions of circle B will be found very nearly under the zeros of its micrometer microscopes.

Let

R denote the reading of the horizontal microscope of circle A when the telescope points to the zenith;

φ, the latitude of the Transit Circle;

δ, the declination of the object;

r, the refraction of the object;

Then, when the clamp is west, the telescope must be set so that the reading of the horizontal microscope of circle A will be,

For a direct observation - - - - - - $R - \varphi + \delta \pm r$
For a reflection observation - - - - - $180^\circ + R + \varphi - \delta \mp r$

If the clamp is east, the reading will be,

For a direct observation - - - - - - $R + \varphi - \delta \mp r$
For a reflection observation - - - - - $180^\circ + R - \varphi + \delta \pm r$

If the true value of φ were substituted in these expressions, whenever the computed setting was not exactly an even minute, it would be necessary to set on the *nearest* even minute. In practice, it is found much more convenient to set on the *next less* even minute; and, in order to avoid measuring more than half the distance between two consecutive divisions on the circle with the zenith-distance micrometer, a fictitious value of φ is used. The fictitious latitude is $\varphi + 1'$ for a direct observation with clamp east, and a reflection observation with clamp west; and $\varphi - 1'$ for a direct observation with clamp west, and a reflection observation with clamp east. The formulæ actually employed for computing the settings are, therefore,

For a direct observation, clamp east - - - $38^\circ\ 50'.6 - \delta \mp r$
For a reflection observation, clamp east - - $141^\circ\ 3'.4 + \delta \pm r$
For a direct observation, clamp west - - - $321^\circ\ 3'.4 + \delta \pm r$
For a reflection observation, clamp west - - $218^\circ\ 50'.6 - \delta \mp r$

In these formulæ, r is taken with the upper sign for an object south, and with the lower sign for an object north of the zenith. For the moon, r is made equal to the sum of the refraction and parallax. In observing faint objects, it is often desirable to know the approximate reading of the zenith-distance micrometer for the point at which the object will enter the field of view. In both positions of the clamp, the reading is computed from the formula,

$$\text{Micrometer reading} = 39 \text{ revolutions} - \frac{\varepsilon}{R}$$

where ε is the difference between the computed setting and the next less even minute, and R is the value of one revolution of the micrometer-screw.

The adopted mode of observing is to move the zenith-distance micrometer until the image of the star or of the limb of the sun, moon, or planet bisects the space between the two middle threads of the micrometer, and this operation is called, in this introduction, briefly, *bisecting* the object. It is not easy to observe very faint objects in this way, and such are bisected with the threads A or B. These latter threads are also used, in order to avoid moving any thread more than two minutes, when observing two or more objects on the same setting, differing more than two minutes in declination. All bisections are made by always moving the micrometer-threads *from* the head. The microscope-micrometer threads are always moved *toward* the head. The readings of the zenith-distance micrometer are taken from the self-registering indexes after the completion of each observation.

Three persons are usually employed in making a complete observation of the four limbs of the sun, though it is sometimes accomplished by two. The setting for

the north and south limbs is computed, a paste-board cap with a circular aperture three inches in diameter is put over the object-glass, a shade-glass is placed on the eye-piece, and the telescope set for the position of the sun's center. About two minutes before the predicted time of transit of the sun's center, the shutters are opened, and the observer notes the time of transit of the preceding limb over the eleven transit threads in the usual way. The assistant at circle A now sets the telescope for the observation of one of the horizontal limbs, and, while the observer is making the bisections at threads I and II, the assistant at circle B reads the four microscopes. This done, the telescope is set for the other limb, the bisections at threads VI and VII are made, and the assistant at circle B again reads the four microscopes. The telescope is then unclamped and moved until the following limb is in the field, when its transit over all the threads is observed. The shutters are then closed, and the observation completed by making the usual observations of the external thermometer, barometer, and attached thermometer. During the observation, the circles are protected from the direct rays of the sun by the steps and platform used in observing the nadir point.

In observations of the moon, if the preceding limb is the full one, the settings for the center and for the full horizontal limb are computed and the instrument set for the center, but not clamped. The transit of the preceding limb is then observed, and the observer going to circle A sets the instrument on the full horizontal limb. Returning to the eye-piece, he makes the bisections usually at threads II, III, IV, V, and VI. The observation is completed by reading the microscopes of circle B.

If the following limb is full, the telescope is set for the position of the full horizontal limb, and the microscopes are read before the moon enters the field. After the bisections are made, the telescope is unclamped and moved till the following limb is in the field, when the transit is observed in the same way as for the preceding limb.

When the larger planets are observed, the bisections of one limb are made at threads I and VII, and of the other at II and VI. The transit of the preceding limb is usually observed at sets B and D, and of the following limb at set C, though this order is sometimes reversed.

Planets which do not present a well-defined disk are observed in the same manner as fixed stars.

The general plan for observing fixed stars is as follows:

(1) If the star is within 5° of the pole, the transit is observed by eye and ear at the threads of set C, and it is bisected at C_1, C_3, and C_5, or sometimes at all the threads of the set.

(2) If the star is situated between 5° and 20° of polar distance, the transits over set C are recorded on the chronograph in the usual way, and it is bisected at any two of the threads B_1, B_3, D_1, D_3; preference being given to the combinations B_3, D_1, or B_1, D_3, which make the observation symmetrical.

(3) If the polar distance of the star exceeds 20°, its transit over the eleven threads is recorded on the chronograph, and the bisections are made at any two of the threads I, II, VI, VII; preference being given to the combinations II, VI, or I, VII. Sometimes bisections are made at each of the threads I, II, VI, VII.

(4) In the case of double stars, the transit of one component is usually observed

over sets B and D, and of the other over set C. The bisection of one component is made at threads I and VII, and of the other at threads II and VI.

In observing transits by eye and ear, the beat of the chronograph-pen is used and not that of the counting-clock.

Wire Intervals.—In the reduction of the observations for 1874, the thread intervals used were those determined in 1871 from transits of circumpolar stars. The equatorial intervals between each transit thread and the mean of B_1, B_2, B_3, C_2, C_3, C_4, D_1, D_2, and D_3, are as follows:

s.	s.	s.
B_1 + 12.240	C_1 + 4.095	
B_2 + 9.706	C_2 + 2.023	D_1 − 8.167
B_3 + 8.190	C_3 + 0.012	D_2 − 9.704
	C_4 − 2.049	D_3 − 12.260
	C_5 − 4.088	

In reading from the chronograph sheets the records of all complete observations, the records for C_1 and C_5 are omitted, and the remaining nine wires are considered the standard set.

The Zenith-Distance Micrometer-Screw.—From a series of observations made in 1873, the value of one revolution of the zenith-distance micrometer-screw was found to be 15″.312, and this value has been used in reducing the observations made in 1874.

When the close pair of micrometer-threads occupies the center of the space between the fixed horizontal threads, the reading of the micrometer-screw is 40 revolutions, and the reading increases as the threads move from the micrometer-head.

The Right-Ascension Micrometer-Screw.—The adopted value of one revolution of this screw is 1ˢ.024. This value was determined by measuring the intervals between the transit threads, which had been determined by the transits of stars near the pole.

Inclination of Threads.—The corrections for inclination of micrometer-threads in 1874 are given in the table below.

TABLE I.

Vertical Thread.	Thread A.	Middle Pair.	Thread B.
	′ . ″	″	′ ″
I	− 2 33.40	− 0.43	+ 2 33.39
II	− 2 33.30	− 0.29	+ 2 33.40
III	− 2 33.20	− 0.14	+ 2 33.40
IV	− 2 33.10	0.00	+ 2 33.41
V	− 2 33.01	+ 0.14	+ 2 33.42
VI	− 2 32.91	+ 0.29	+ 2 33.42
VII	− 2 32.81	+ 0.43	+ 2 33.43

The corrections for A and B in the above table contain, besides the correction for inclination, the reduction to the middle pair of threads.

Collimation Constant.—The collimation constant is determined by means of the collimators without reversing the instrument.

The covers of the opening through the central cube of the telescope are removed, and the instrument turned until the horizontal thread in collimator A appears in the field at about 35 revolutions. Then, by means of the screws acting against the Y's of collimator A, its vertical thread is moved until it is seen very near the image of C_3 in the telescope. Three measures of the small distance between C_3 and the image of the vertical thread in the collimator are then made with the right-ascension micrometer by moving its thread until the collimator thread bisects the space between the movable thread and C_3, and by obtaining a coincidence between C_3 and the movable thread. The deviation will be half the space measured by the movable thread.

The telescope is then pointed to the zenith, and the micrometer of collimator B is moved until the intersection of its cross-threads is exactly on the image of the vertical thread of collimator A. The telescope is then pointed on collimator B, and four measures made of the distance between C_3 and the intersection of the cross-threads. These measures are made in the same manner as those on the vertical thread of collimator A.

The telescope is again pointed to the zenith, and the adjustment of the vertical thread of collimator A on the cross-threads of collimator B is examined. If it is imperfect, it is readjusted, and another set of measures similar to the first is made. The mean of the first and last sets of measures is taken as the true distance of C_3 from the image of the vertical thread of collimator A. Care is taken to determine the value of C_0 when the temperature is changing very slowly.

In the computation of the constant from these data, in 1874,

c_τ = the sum of the collimation constant at the temperature τ° Fah., and the constant of diurnal aberration;

c_0 = the sum of the same constants at the temperature 0° Fah.;

M = the distance, in micrometer revolutions, of the image of the vertical thread of collimator *A east* of c_3;

M' = the distance, in micrometer revolutions, of the image of the intersection of the threads in collimator *B east* of c_3;

R = the value, in seconds of time, of one revolution of the micrometer-screw = $1^s.024$;

φ = the latitude of the observatory;

i = the reduction of the position of c_3 to the mean of the set of nine wires = $+0^s.004$:[1]

Then, if M and M' have been observed at the temperature τ° Fah.,

$$c_\tau = \tfrac{1}{2}(M+M')\,R - 0^s.021\cos\varphi - i = 0^s.512\,(M+M') - 0^s.020$$

In the Transit Circle, the collimation varies with the temperature, and from a discussion of many observations, made at widely different temperatures, it has been found that

$$c_0 = c_\tau \mp 0^s.004\,\tau$$

where the upper sign is used when the clamp is east, and the lower when it is west.

[1] This value was derived from the measures made with the micrometer-engine in 1873. See vol. for 1873, p. xxix.

As the value of c_0 has been found to be very steady throughout the year for several years, it is usually determined two or three times a month. For special observations on other days, the value of c_0 is obtained by interpolation, and from it, and the observed temperature at the time, the actual collimation constant is obtained from the formula

$$c_\tau = c_0 \pm 0^s.004\ \tau$$

For the final reduction of observations with the Transit Circle, a constant value of c_0 is used throughout the year. The value used is the mean of all the values determined by observation.

The Level Constant.—The instrument employed is a hanging level. Its tube is three-quarters of an inch in diameter, ten inches long, and has a chamber at one end, so that the length of the bubble is adjustable. It seems to be most sensitive when its length is about 1.25 inch. The scale is numbered continuously from end to end, the numbers running from 0 to 90. The length of one division is about 0.09 inch, and its value is $0^s.058$.

In using the level, it is always reversed twice, giving two readings with it direct and two with it reversed.

In computing the constant from the observations,

b = the level constant;

W and E = the sum of the two readings of the west and east ends of the bubble with the level in its first position;

w and e = the sum of the two readings of the west and east ends of the bubble with the level reversed:

Hence,

$$b = 0^s.00725\ [(W+E)-(w+e)]$$

When the $\left\{\begin{matrix}\text{west}\\\text{east}\end{matrix}\right\}$ end of the bubble gives the greatest reading, the sign of b is $\left\{\begin{matrix}+\\-\end{matrix}\right\}$

A careful examination of the pivots indicates that they are sensibly round and equal in diameter.

The Azimuth Constant.—The azimuth constant is generally determined from the observed transit of some of the "azimuth stars"—Polaris, δ Ursæ Minoris, 51 Cephei, or λ Ursæ Minoris—by means of the formula

$$a = \frac{\alpha - (T + \Delta T + Bb + Cc)}{A}$$

where a, b, and c are the azimuth, level, and collimation constants; A, B, and C, the azimuth, level, and collimation factors; α, the adopted right ascension of the star; T, its observed time of transit; and ΔT, the approximate clock correction at T. When the same star is observed, both above and below the pole, on the same observing-day, the mean of the constants derived from those observations is adopted for the azimuth constant for that observing-day.

If no star is observed above and below the pole, the adopted constant is the mean of the results obtained from such azimuth stars as have been observed.

If from any cause no azimuth stars are observed, the constant is derived from the observed places of all the known stars by the method of least squares.

The Zenith-Point Correction.—This constant is determined from observations of the nadir point with a Bohnenberger eye-piece in the following manner:

(1) The telescope is pointed downward over a box of mercury, set so that the circle reading is 179° 56′, and the four microscopes at circle B are read;

(2) Two readings of the zenith-distance micrometer are then taken by moving the close pair of micrometer-threads until the space between them and their images appears equal to the distance between the two threads, the threads being nearer the head of the micrometer;

(3) Four readings of the micrometer are next made in the same way as before, except that the threads are placed the other side of the images;

(4) Two more readings of the micrometer are then made in the same manner as the first two, and the microscopes at circle B are again read.

The mean of the eight micrometer readings will give the reading for the coincidence of the two threads and their images. The second circle reading is taken for a check on the first.

The observations are reduced by means of the formula:

$$\text{Zenith-Point Correction} = \left\{\begin{array}{l} 180^\circ + \text{Division Correction for Circle B} \\ \quad + \text{Correction for Flexure of Circle B} \\ \quad + \text{Correction for Flexure of Telescope} \\ \quad - \text{Constant added to Reduction to Meridian} \end{array}\right\}$$

$$- \left\{\begin{array}{l} 179^\circ\ 56' \pm 10 \text{ Revolutions of Micrometer Microscopes} \\ \quad \mp \text{Observed Reading of Micrometer Microscopes} \\ \quad + \text{Micrometer Equivalent corresponding to the sum of the Observed Reading of the Zenith-Distance Micrometer and } 0^r.250. \end{array}\right\}$$

The values of the division and flexure corrections are found by means of the formulæ for reflection observations in Tables II, III, IV and V. The constant added to the reduction to the meridian is 1″.80. In the terms relating to the micrometer microscopes, the upper signs are to be taken when the clamp is east and the lower when it is west.

The value of the first term in the expression for the zenith-point correction is a constant, and, in 1874, the different terms were obtained as follows:

In 1874, the clamp was west; circle B was used; the reading of the horizontal microscope, when the telescope was pointed to the zenith, was $44^\circ.0 = R_0$, and the distance of the nadir point from the reflected pole was $51^\circ.1 = \Delta$. With these data, Table III gives 44°.0 as the argument with which to enter Table II to find the division correction, +0″.07. With the same data, Table IV gives the correction for

circle flexure $-0''.04$; and Table V gives the correction for flexure of telescope $+0''.29$. Hence, the

	°	′	″
Nadir constant is - - - - - - - - - - - - -	180	0	0
Correction for errors of division is - - - - - -		+	0.07
Correction for flexure of circle is - - - - - -		—	0.04
Correction for flexure of telescope is - - - - -		+	0.29
Constant added to reduction to meridian is - -		—	1.80
	179	59	58.52

The second term is simply the concluded circle reading when the clamp is west.

The correction $+0^{r}.250$ to the reading of the zenith-distance micrometer is necessary, because the head of that micrometer has four indexes, and the one used in the nadir observation reads $0^{r}.250$ less than that employed in other observations.

The observations of the nadir point made in 1874, together with the resulting zenith-point corrections, will be found in Table E of this introduction.

The first column gives the mean day, and the second column gives the sidereal hour to the nearest tenth. The third column contains the observer's initial. The fourth, fifth, sixth, and seventh columns contain the mean of the two readings of each micrometer microscope when the telescope was pointed to the nadir.

The divisions of circle B on which the readings were actually made are:

For microscope V, - - - - - - - - - - - -	179°	0′
For microscope VI, - - - - - - - - - - - -	269°	0′
For microscope VII, - - - - - - - - - - - -	359°	0′
For microscope VIII, - - - - - - - - - - - -	89°	0′

The whole revolutions of microscope V are always given, and the revolutions for the others are easily inferred.

The eighth column contains the concluded circle reading. The ninth column contains the reading of the zenith-distance micrometer for the coincidence of the threads with their images. The complete nadir reading is found in the tenth column, and in the last column is found the adopted zenith-point correction.

OBSERVATIONS WITH THE TRANSIT CIRCLE.

These observations will be found on pages 1 to 179. In printing, the rule has been adopted to give the data as recorded by the observer, without alteration in any case whatever. When, in rare cases, the record seems to be erroneous or deficient, the error or change is explained in a foot-note. Where there is no reasonable doubt of the nature of an error, the necessary correction is introduced at the most convenient point in the progress of the reductions.

The observations of right ascension are printed on the left-hand pages.

The first column contains the day of the observation, which begins with the transit of the sun.

The second column contains the reference number.

The third column contains the name of the object. In the case of the sun, moon, and planets, the part observed is always specified; I and II indicating respectively the preceding and following limbs; N. and S., the north and south limbs; and C., the center. When one component of a double star is observed, it is always the brighter of the two, unless otherwise designated.

The fourth column contains the initial of the observer, as follows:

Ha.—Professor William Harkness, U. S. N.
E.—Professor J. R. Eastman, U. S. N.
F.—Assistant Edgar Frisby.
S.—Assistant Ormond Stone.
Sk.—Assistant A. N. Skinner.

The nine columns from the fifth to the thirteenth contain the seconds and tenths of the observed time of transit over each thread. Objects observed over the standard set of nine threads, viz, set B, C_2, C_3, C_4, and set D, are recorded in the columns I to IX; those observed over only set C, in the columns III to VII; those observed over only sets B and D, in the columns I to III and VII to IX; those observed over only sets B and C, in the columns I to VIII; and those observed over only sets C and D, in the columns II to IX.

In the case of irregular observations, the threads can generally be identified by means of the recorded intervals.

Transits below the pole are recorded in the reverse order of that actually observed, so that the record for each thread occupies the same column that it would have done if the transit had been above the pole.

The fourteenth column contains the time of transit over the "mean thread", whose position is the mean of the standard set of nine threads. When stars are observed over other or less threads than the standard set, the recorded transit over each thread is reduced to the "mean thread" by means of the known thread intervals.

In the case of other objects, the reduction for each thread is corrected for the motion of the object during the interval between each thread and the "mean thread".

The fifteenth column contains the sum of the instrumental corrections, or the quantity

$$Aa + Bb + Cc$$

where a, b, c are the constants, and A, B, C are the factors for azimuth, level, and collimation.

The formulæ for computing A, B, and C are:

$$A = \sin(\varphi - \delta) \sec \delta = \sin \varphi - \cos \varphi \tan \delta$$
$$B = \cos(\varphi - \delta) \sec \delta = \cos \varphi + \sin \varphi \tan \delta$$
$$C = \sec \delta$$

in which φ is the latitude of the observatory, and δ is the declination of the object observed.

The reductions of transit observations with the Transit Circle are made by means

of tables giving the values of Aa, Bb, and Cc for each degree of zenith distance, and for each $0^s.01$ of the constants a, b, c, from $0^s.01$ to $0^s.50$. These tables may be found in Appendix I to the Washington Observations for 1872.

A general table of the values of the factors A, B, and C may be found on page xlvii of the Introduction to the Transit Circle in 1873.

Table B, following this introduction, contains the adopted values of the instrumental constants for all occasions on which observations were made. The first column gives the mean date to the nearest tenth of a day. The second column gives the approximate mean temperature for the date which is used in computing the collimation constant from the absolute determinations contained in Table A. In Table B, τ is the mean of the sum of the readings of the attached thermometer at the beginning and end of the observing period indicated by the date, and of the upper thermometer at the time the nadir was observed. The third, fourth, and fifth columns contain respectively the adopted values of the collimation, level, and azimuth constants.

The sixteenth column contains the apparent clock corrections given by direct observation of stars of the American Ephemeris situated within 40° of the equator. The adopted apparent right ascensions of these stars are obtained by applying the corrections given in Table C to the apparent right ascensions given in the American Ephemeris.

Table C contains the corrections deduced in Appendix III, Washington Observations for 1867, subsequently corrected by $-0^s.03$; and these modified corrections have been used in the reduction of observations with the Transit Circle in 1870, 1871, 1872, 1873, and 1874, with the exception of the correction for α Canis Minoris, which was changed in 1872 from $-0^s.14$ to $-0^s.16$.

The seventeenth column contains the adopted clock correction for each object observed, computed from the data in Table D.

Table D is constructed upon the assumption that for each observing-day the mean of all the apparent clock corrections obtained by the same observer corresponds to the mean of the times at which they were observed.

The first column contains the mean date, together with the sidereal hour and tenth corresponding to the mean of the right ascensions of all the clock-stars observed. The corresponding mean of the apparent clock corrections is found in the third column. The second column contains the observer's initial. When clock corrections are obtained by more than one observer on the same day, the results are given separately for each observer.

Observations by two or more observers for the purpose of determining their relative personal equations were made on eleven nights during the year; and the results, computed in the usual way and referred to Professor Eastman as the standard observer, are as follows:

$$\begin{aligned} \text{E.} &= 0^s.00 \\ \text{Ha.} &= -0^s.20 \\ \text{F.} &= -0^s.06 \\ \text{S.} &= -0^s.02 \\ \text{Sk.} &= -0^s.23 \end{aligned}$$

Applying these quantities to the numbers in the third column produces the numbers in the fourth column, which contains the clock corrections corrected for personal equation. The quantities in the fifth column are obtained by dividing the difference between two consecutive values in the fourth column by the corresponding interval, in days, in the first column.

The adopted daily rate of the clock, in the sixth column, is obtained by taking the mean of the apparent rates for two intervals, one of which immediately precedes and the other follows the epoch of the clock correction.

The eighteenth column contains the apparent right ascension of each object, or the sum of the fourteenth, fifteenth, and seventeenth columns, and in all cases has reference to that part of the object which was actually observed.

The nineteenth column contains,

(1) The corrections given by each observation to the right ascension of the stars of the American Ephemeris.

(2) The reduction for all other stars to their mean position for the fictitious epoch 1874.0. This reduction is computed with the constants of the American Ephemeris, and no proper motion is applied.

(3) The sidereal time of the semi-diameter of the sun, the moon, or a planet passing the meridian, when only one limb is observed, as given in the American Ephemeris. In the case of the sun, the Ephemeris time should be corrected for the personal equation of the observer.

The right-hand pages of the "Observations with the Transit Circle" contain the observations of north-polar distance.

The first column contains the reference number.

The second column contains the degrees and minutes indicated by the horizontal or setting microscope of circle A. Designating these degrees and minutes by R, the divisions of circle B actually observed by its micrometer microscopes were:

		°	′	
For microscope	V	358	56	$-R$
For microscope	VI	88	56	$-R$
For microscope	VII	178	56	$-R$
For microscope	VIII	268	56	$-R$

The third, fourth, fifth, and sixth columns contain the readings of the micrometer microscopes of circle B. The numbers at the heads of the columns correspond with those on the microscopes. The whole revolutions of microscope V are always 10, unless otherwise noted. Owing to imperfect adjustment, the same number of revolutions does not apply to all the microscopes; but these are readily inferred from that given for microscope V.

The seventh column contains the whole revolutions of the zenith-distance micrometer-screw for the first bisection of the object, and the eighth, ninth, tenth, eleventh, and twelfth columns contain the thousandths of a revolution of the micrometer-screw for each bisection of the object.

The vertical threads at which the bisections were made are indicated as follows:

For objects within 5° of the pole, the columns eight to twelve refer to the threads C_1 to C_5; but, for other objects, they refer to threads I, II, IV, VI, and VII. Whenever this rule is not observed, a foot-note is employed to explain the manner of making the bisections. The foot-note "Bisections at sets B and D" refers to the threads B_1, B_3, C_3, D_1, and D_3.

The thirteenth column contains the zenith-point correction. This quantity is generally taken directly from the last column of Table E, and is constant for each group of observations; but, when there is conclusive evidence that the correction is changing considerably, its value for each observation is interpolated from the observed values.

When a group of observations was made, and from any cause no nadir observation could be obtained, the zenith-point correction was obtained by comparing the observed north-polar distances of the different stars of the group with the mean north-polar distances found for the same stars throughout the year.

The fourteenth column contains the *apparent zenith distance south* of each object, measured continuously from the zenith toward or through the south to the object.

This distance is the sum of

(1) The approximate zenith distance south;
(2) The micrometer equivalent;
(3) The reduction to the meridian;
(4) The correction for inclinations of threads and motion of object;
(5) The correction for the thread employed in the bisections;
(6) The zenith-point correction taken from the preceding column.

(1) When the clamp is east, the approximate zenith distance south is equal to the reading of the horizontal microscope of circle A, minus the excess of the mean of the readings of the micrometer microscopes of circle B above ten revolutions. When the clamp is west, it is equal to 359° 52′, minus the reading of the horizontal microscope of circle A, plus the excess of the mean of the readings of the micrometer microscopes of circle B above ten revolutions.

(2) The micrometer equivalent of the readings of the zenith-distance micrometer, if the clamp is east, is

$$2'\ 0''.0 + R\,(40^r.000 - r)$$

if the clamp is west, it is

$$4'\ 0''.0 - R\,(40^r.000 - r)$$

In these furmulæ, r is the mean of the readings of the zenith-distance micrometer, expressed in revolutions; R, the mean value of one revolution between r and 40.0 revolutions, and the numerical term is a constant added to make the zenith-point correction always positive.

In practice, the micrometer equivalents are taken from a table where the values are tabulated for each $0^r.01$ from $24^r.3$ to $47^r.8$.

(3) The reduction to the meridian is computed from the formula

$$\mu = 1''.80 - 112.5 \sin 1'' \, i^2 \tan \delta$$
$$= 1''.80 - [6.7367]\, i^2 \tan \delta$$

where μ is the reduction to the meridian, in seconds of arc; i, the equatorial interval, in seconds of time, between the mean thread and the thread at which the bisection was made; δ, the declination of the object; and 1″.80 is a constant introduced to make μ generally positive. The values of μ are tabulated for all the vertical threads and for each degree of declination.

Where bisections are made away from the vertical threads, the time of the bisection is noted, and the correction is computed from the formula

$$\mu = 1''.80 - [6.4357]\ I^2 \sin 2\delta$$

where I represents the distance of the object from the meridian at the time of bisection, and the other terms are the same as before.

(4) The corrections for inclination of threads given on pages XIII and 3 were derived from a large number of observations at threads I and VII; and the correction for motion of object in unsymmetrical observations is computed from the formula

$$\Delta' = \frac{\Delta}{3600} I$$

where Δ' is the correction for motion, and Δ the hourly motion of the object in declination, both expressed in seconds of arc; I is the interval, in seconds of time, between the mean thread and the thread at which the bisection was made.

(5) In observations where threads A or B were employed, the correction for the distance of the thread from the central pair of threads was required, and the value of this correction is found on pages XIII and 3.

(6) The zenith-point correction is taken directly from the thirteenth column of the observations.

The fifteenth column contains the reading of the thermometer used to determine the temperature of the air.

The sixteenth column contains the correction for refraction computed from Bessel's formula, employing the tables given in the Appendix to the Washington Observations for 1845.

The seventeenth column contains the apparent north-polar distance of each object, or the adopted co-latitude, 51° 6′ 21″.2 $\pm$ the sum of the apparent zenith distance south and the refraction. The upper sign is employed for a direct, and the lower for a reflected observation.

The last column contains:

(1) For stars whose apparent positions are given in the American Ephemeris, the correction to the north-polar distance of the Ephemeris obtained from each observation.

(2) For other stars, the reduction to their mean position for the fictitious epoch 1874.0. This reduction is computed with the constants of the American Ephemeris, and no proper motion is applied.

(3) For the asteroids, the correction for parallax, computed from the data accompanying the ephemerides.

The corrections for parallax, semi-diameter, and defective illumination for the

sun, moon, and larger planets are given at the foot of the pages containing the observations.

All corrections for parallax, except those for the asteroids, are computed from the data contained in the American Ephemeris. When both limbs of an object were observed, the semi-diameter is derived from the observation; but, when only one limb was observed, the semi-diameter is taken from the American Ephemeris.

The corrections for defective illumination are computed from the data of the American Ephemeris.

CORRECTIONS TO THE STAR-POSITIONS OF THE AMERICAN EPHEMERIS, GIVEN BY INDIVIDUAL OBSERVATIONS WITH THE TRANSIT CIRCLE IN 1874.

The tables containing these corrections may be found on pages 303 to 324, and give the date of the observation, the initial of the observer, and the correction for each observation in right ascension and north-polar distance, copied without change, except for erroneous micrometer revolutions, from the last column of each page of observations.

The correction in right ascension in the case of clock-stars is only used when it depends on three other clock-stars, or on one or two stars at least six hours distant in right ascension.

The correction in right ascension for the standard azimuth stars is given only when the azimuth constant was derived from observed transits of one of the stars above and below the pole on the same day, or from the combined results from the observations of two or more stars. In the latter case the names of the stars so combined follow the correction for each star.

An interrogation-mark signifies that the result is doubtful; and an *r*, that it is rejected in the determination of the adopted mean result.

The mean polar distances thus found still require the following corrections:

(1) For errors of division;
(2) For flexure;
(3) For error in zenith-point correction;
(4) For error in assumed latitude.

Errors of Division.—The corrections for errors of division of circle B were determined in November and December, 1865. These corrections are given in the following table,[1] which contains the corrections to be applied to the mean of the readings of the four microscopes in order to free this mean from the effect of errors of division. The argument with which to enter the table is the reading of the horizontal microscope at circle B.

[1] See Washington Observations for 1865, Description of Transit Circle, § 72.

TABLE II.—*Corrections for Errors of Division to be applied to the Mean of the Readings of the Four Micrometer Microscopes of Circle B.*

Arg.	Correction.	Arg.	Correction.	Arg.	Correction.	Arg.	Correction.	Arg.	Correction.
°	"	°	"	°	"	°	"	°	"
0	+ 0.30	18	+ 0.57	36	+ 0.12	54	+ 0.14	72	+ 0.27
1	+ 0.23	19	+ 0.52	37	+ 0.15	55	+ 0.15	73	+ 0.28
2	+ 0.18	20	+ 0.48	38	+ 0.14	56	+ 0.16	74	+ 0.31
3	+ 0.18	21	+ 0.49	39	+ 0.08	57	+ 0.17	75	+ 0.35
4	+ 0.22	22	+ 0.52	40	+ 0.02	58	+ 0.19	76	+ 0.40
5	+ 0.27	23	+ 0.53	41	− 0.07	59	+ 0.20	77	+ 0.45
6	+ 0.27	24	+ 0.50	42	− 0.12	60	+ 0.22	78	+ 0.46
7	+ 0.26	25	+ 0.46	43	− 0.13	61	+ 0.26	79	+ 0.45
8	+ 0.26	26	+ 0.44	44	− 0.07	62	+ 0.28	80	+ 0.44
9	+ 0.27	27	+ 0.42	45	− 0.01	63	+ 0.27	81	+ 0.41
10	+ 0.29	28	+ 0.40	46	0.00	64	+ 0.25	82	+ 0.38
11	+ 0.29	29	+ 0.34	47	0.00	65	+ 0.22	83	+ 0.36
12	+ 0.29	30	+ 0.27	48	0.00	66	+ 0.22	84	+ 0.36
13	+ 0.36	31	+ 0.24	49	+ 0.06	67	+ 0.22	85	+ 0.36
14	+ 0.44	32	+ 0.22	50	+ 0.12	68	+ 0.22	86	+ 0.40
15	+ 0.52	33	+ 0.19	51	+ 0.12	69	+ 0.23	87	+ 0.44
16	+ 0.56	34	+ 0.15	52	+ 0.12	70	+ 0.24	88	+ 0.44
17	+ 0.57	35	+ 0.11	53	+ 0.13	71	+ 0.25	89	+ 0.37

The corrections in this table are only applicable when the microscopes are 90° apart, and their supporting arms make an angle of 45° with the vertical.

The following table gives the argument, in all cases, with which to enter Table II to obtain the division correction which must be applied to an observed north-polar distance. In this table, R_0 is the reading of the horizontal microscope at circle B when the telescope points to the zenith; Δ is the observed north-polar distance of the object, and the last column indicates the use of the sign of the correction in Table II.

The argument will, of course, be brought into the first quadrant.

TABLE III.

Clamp.	Observation.	Argument.	Sign of Correction.
East	Direct	$R_0 + 51.1 - \Delta$	Changed
	Reflected	$R_0 + 38.9 + \Delta$	Same
West	Direct	$R_0 + 38.9 + \Delta$	Same
	Reflected	$R_0 + 51.1 - \Delta$	Changed

Flexure.—The correction to an observed circle reading for flexure of circle is,[1] for circle B, $+ 0''.84 \sin R - 0''.86 \cos R$, where R is the reading of the horizontal microscope when the telescope is pointed to the object. Changing the expression for the cor-

[1] Washington Observations, 1865, Description of Transit Circle, § 61.

rection for flexure of circle, so that the correction will be a function of the north-polar distance, we have the following table for circle B, clamp west.

TABLE IV.

	Correction.
	" °
For direct observations	+ 1.20 sin (R_0 + 263.2 + Δ)
For reflection observations . .	− 1.20 sin (R_0 + 185.4 − Δ)

where the quantities have the same signification as in Table III.

From observations[1] made in 1872 and 1873, the following formulæ were obtained for determining the correction to be applied to an observed north-polar distance for the effect of flexure of telescope and curvature of level for clamp west, circle B:

TABLE V.

	Correction.
	" °
For a direct observation . . .	− 0.95 sin (Δ − 68.9)
For a reflection observation . .	+ 1.10 sin (Δ − 35.8)

The correction for constant error in the zenith-point is obtained from a comparison of the direct and reflection observations in 1874.

The method of obtaining the value of this correction is shown in Table VI, where the results of the observations are collected. In this table, the first column contains the names of all the stars observed by reflection in 1874. The second column contains the mean values of the north-polar distances given by direct observations; and the third column contains the seconds of the mean values obtained from reflection observations. The small subscript figures indicate the number of observations made on each star. The fourth column contains the difference between the direct and reflection observations. The fifth column contains the corrections which must be applied to the quantities in the fourth column on account of the errors of graduation and flexure of telescope and circle. The sixth column contains the sums of the quantities in the fourth and fifth columns.

The seventh column contains the weights of the values of $2\Delta Z$ in the sixth column. The weights are computed by the formula

$$p = \frac{12mn}{2mn + 11(m+n)}$$

where p is the weight; m, the number of direct observations, and n the number of reflection observations of each star.

The eighth column contains the products of the quantities in the sixth column by their respective weights, and the final results are:

From observations north of the zenith - - - - - - $\Delta Z = +0''.02$
From observations south of the zenith - - - - - - $\Delta Z = -0''.87$

[1] Introduction to Transit Circle, Washington Observations, 1872, page lxiv.

TABLE VI.—*Computation of the Value of ΔZ from the Observations in* 1874.

Name of Star.	Observed North-Polar Distance. Direct.			Observed North-Polar Distance. Reflection.	D.−R.	Corr. to D.−R.	$2\Delta Z$	ρ	$2\rho\Delta Z$
NORTHERN STARS.	°	′	″	″	″	″	″		″
4 Draconis . . .	11	41	0.78_3	0.13_2	+ 0.65	+ 0.19	+ 0.84	1.08	+ 0.91
Polaris, S. P. . .	358	38	13.59_{56}	13.36_2	+ 0.23	+ 0.32	+ 0.55	1.56	+ 0.86
ζ Ursæ Minoris . .	11	49	7.72_5	8.64_1	− 0.92	+ 0.19	− 0.73	0.79	− 0.58
κ Cephei	12	40	7.65_2	5.65_1	+ 2.00	+ 0.20	+ 2.20	0.65	+ 1.43
γ Cephei	13	4	14.93_2	14.98_2	− 0.05	+ 0.20	+ 0.15	0.92	+ 0.14
79 Draconis . . .	16	53	36.55_8	37.95_3	− 1.40	+ 0.28	− 1.12	1.70	− 1.90
11 Cephei	19	16	5.26_1	7.26_1	− 2.00	+ 0.22	− 1.78	0.50	− 0.89
κ Draconis . . .	19	31	0.13_1	0.23_2	− 0.10	+ 0.21	+ 0.11	0.65	+ 0.07
λ Draconis . . .	19	58	24.63_3	24.50_1	+ 0.13	+ 0.22	+ 0.35	0.72	+ 0.25
β Cephei	19	59	30.58_2	31.68_1	− 1.10	+ 0.22	− 0.88	0.65	− 0.57
9 Camelopardalis .	23	52	29.71_3	29.94_1	− 0.23	+ 0.31	+ 0.08	0.72	+ 0.06
i Cephei	24	27	42.23_3	42.63_2	− 0.43	+ 0.30	− 0.13	1.08	− 0.14
α Draconis . . .	25	1	16.02_{11}	16.39_2	− 0.37	+ 0.29	− 0.08	1.41	− 0.11
α Ursæ Majoris . .	27	34	7.69_{12}	8.74_{10}	− 1.05	+ 0.18	− 0.87	2.99	− 2.60
α Cephei	27	56	50.76_{11}	51.31_8	− 0.55	+ 0.18	− 0.37	2.31	− 0.85
α Cassiopeæ . . .	34	9	13.35_2	13.25_1	+ 0.10	+ 0.13	+ 0.23	0.65	+ 0.15
θ Bootis	37	33	56.94_6	56.66_1	+ 0.28	− 0.13	+ 0.15	0.81	+ 0.12
η Ursæ Majoris . .	40	3	24.88_{11}	24.15_2	+ 0.73	− 0.24	+ 0.49	1.41	+ 0.69
α Persei	40	35	21.27_7	20.91_2	+ 0.36	− 0.27	+ 0.09	1.33	+ 0.12
ι Ursæ Majoris . .	41	27	54.67_4	53.10_4	+ 1.57	− 0.30	+ 1.27	1.60	+ 2.03
δ Persei	42	37	1.80_9	1.27_1	+ 0.53	− 0.34	+ 0.19	0.84	+ 0.16
τ Herculis . . .	43	23	8.09_{10}	7.60_1	+ 0.49	− 0.33	+ 0.16	0.85	+ 0.14
α Cygni	45	10	7.69_{15}	5.62_1	+ 2.07	− 0.35	+ 1.72	0.87	+ 1.50
									$\Delta Z = +0''.02$
SOUTHERN STARS.									
β Geminorum . .	61	40	16.25_{27}	18.17_1	− 1.92	− 0.27	− 2.19	0.90	− 1.97
ε Bootis	62	23	35.17_{23}	36.20_1	− 1.03	− 0.24	− 1.27	0.89	− 1.13
ε Leonis	65	38	46.52	47.57_1	− 1.05	− 0.09	− 1.14	0.88	− 1.00
δ Leonis	68	47	8.88_{30}	9.95_2	− 1.07	+ 0.13	− 0.94	1.53	− 1.44
α Bootis	70	9	37.37_{22}	38.95_6	− 1.58	+ 0.15	− 1.43	2.77	− 3.96
γ Geminorum. . .	73	29	42.56	44.95_1	− 2.39	+ 0.16	− 2.23	0.88	− 1.96
ζ Aquilæ	76	19	18.40^m	19.54_1	− 1.14	+ 0.22	− 0.92	0.87	− 0.80
α Leonis	77	25	2.56_{36}	5.51_3	− 2.95	+ 0.25	− 2.70	2.01	− 5.43
ε Delphini. . . .	79	7	23.33_5	26.99_1	− 3.66	+ 0.28	− 3.38	0.79	− 2.67
γ Aquilæ	79	41	31.37_{24}	32.85_1	− 1.48	+ 0.27	− 1.21	0.89	− 1.08
ε Pegasi	80	42	4.96_5	7.20_1	− 2.24	+ 0.23	− 2.01	0.87	− 1.75
o Piscium	81	28	37.47_{19}	39.45_3	− 1.98	+ 0.20	− 1.78	1.92	− 3.42
ξ^1 Ceti	81	44	42.39_{21}	41.83_1	+ 0.56	+ 0.19	+ 0.75	0.88	+ 0.66
ω Piscium	83	50	1.30_4	3.60_1	− 2.30	+ 0.21	− 2.09	0.76	− 1.59
α Canis Minoris . .	84	27	12.49_{31}	14.89_2	− 2.40	+ 0.21	− 2.19	1.53	− 3.35
α Ceti	86	24	19.33_{18}	22.87_2	− 3.54	+ 0.20	− 3.34	1.48	− 4.94
δ Aquilæ	87	8	3.06	5.52_1	− 2.46	+ 0.19	− 2.27	0.88	− 2.00
π Aquarii	89	15	38.58_4	39.96_3	− 1.38	+ 0.14	− 1.24	1.43	− 1.77
η Virginis	89	57	58.36_8	58.82_6	− 0.46	+ 0.14	− 0.32	2.15	− 0.69
η Aquarii	90	45	56.59_3	58.56_2	− 1.97	+ 0.11	− 1.86	1.08	− 2.01
α Aquarii	90	55	50.67	52.96_3	− 2.29	+ 0.10	− 2.19	1.86	− 4.07
β Libræ	98	54	57.98_{13}	59.68_1	− 1.72	+ 0.16	− 1.56	0.87	− 1.36
α Virginis	100	30	9.43_{28}	12.39_1	− 2.96	+ 0.14	− 2.82	0.89	− 2.51
									$\Delta Z = -0''.87$

The correction for error of assumed latitude is derived from a comparison of the observations of the same stars, both above and below the pole. Table VII exhibits the method of obtaining the value of the correction, $\Delta\varphi$. The fifth column contains the sum of the corrections for the errors of division, flexure, and assumed zenith-point. The other columns will require no explanation.

From this table, it is found that $\Delta\varphi = -0''.51$.

TABLE VII.—*Computation of the value of $\Delta\varphi$ from Observations made in* 1874

Object.	Observed North-Polar Distance. Culmination. Upper.	Lower.	U. + L. −360°	Corr. to U. + L. −360°	$2\Delta\phi$	p	$2p\Delta\phi$
	° ′ ″	″	″	″	″		″
λ Ursæ Minoris. .	1 4 17.12$_{16}$	41.24$_{15}$	− 1.64	+ 0.53	− 1.11	3.51	− 3.90
Polaris. . . .	1 21 44.64$_{49}$	13.59$_{56}$	− 1.77	+ 0.54	− 1.23	4.96	− 6.10
51 Cephei. . . .	2 45 51.11$_{16}$	7.51$_{14}$	− 1.38	+ 0.61	− 0.77	3.46	− 2.66
δ Ursæ Minoris. .	3 23 31.77$_{25}$	25.82$_{16}$	− 2.41	+ 0.63	− 1.78	3.84	− 6.84
32^1 Camelopardalis .	5 53 48.06$_1$	11.22$_4$	− 0.72	+ 0.64	− 0.08	0.76	− 0.06
32^2 Camelopardalis .	5 54 6.36$_1$	53.34$_4$	− 0.30	+ 0.64	+ 0.34	0.76	+ 0.26
ε Ursæ Minoris. .	7 45 30.99$_8$	27.05$_6$	− 1.96	+ 0.42	− 1.54	2.30	− 3.54
1 Draconis . . .	8 7 10.41$_6$	45.89$_4$	− 3.70	+ 0.40	− 3.30	1.82	− 6.01
12-Year Cat. 1879	9 55 16.89$_3$	41.71$_3$	− 1.40	+ 0.25	− 1.15	1.28	− 1.47
4 Draconis . . .	11 41 0.78$_3$	58.62$_1$	− 0.60	+ 0.30	− 0.30	0.72	− 0.22
ζ Ursæ Minoris. .	11 49 7.22$_5$	51.26$_1$	− 1.52	+ 0.30	− 1.22	0.79	− 0.96
κ Cephei. . . .	12 40 7.65$_2$	50.00$_2$	− 2.35	+ 0.31	− 2.04	0.92	− 1.88
48 Cephei. . . .	12 43 54.53$_6$	3.47$_3$	− 2.00	+ 0.31	− 1.69	1.53	− 2.59
γ Cephei. . . .	13 4 14.93$_2$	45.62$_4$	+ 0.55	+ 0.31	+ 0.86	1.17	+ 1.01
9 Draconis . . .	13 38 19.50$_3$	38.10$_2$	− 2.40	+ 0.28	− 2.12	1.28	− 2.71
5 Ursæ Minoris. .	13 44 37.01$_6$	21.11$_7$	− 1.88	+ 0.28	− 1.60	2.22	− 3.55
226 Cephei. . . .	14 25 22.17$_2$	37.98$_1$	+ 0.15	+ 0.28	+ 0.43	0.65	+ 0.28
β Ursæ Minoris. .	15 19 45.49$_{13}$	13.82$_6$	− 0.69	+ 0.27	− 0.42	2.56	− 1.08
Groombridge 4163	16 17 27.10$_8$	34.43$_3$	+ 1.53	+ 0.30	+ 1.83	1.24	+ 2.27
79 Draconis . . .	16 53 36.55$_8$	22.49$_6$	− 0.96	+ 0.31	− 0.65	2.15	− 1.40
γ^2 Ursæ Minoris. .	17 43 3.38$_8$	55.25$_6$	− 1.37	+ 0.31	− 1.06	2.15	− 2.28
ψ^1 Draconis . . .	17 47 24.07$_1$	34.23$_4$	− 1.70	+ 0.31	− 1.39	0.76	− 1.06
Groombridge 3241	17 53 43.73$_3$	17.85$_3$	+ 1.58	+ 0.31	+ 1.89	1.08	+ 2.04
50 Cassiopeæ . .	18 11 21.35$_3$	35.65$_3$	− 3.00	+ 0.31	− 2.69	0.92	− 2.47
κ Draconis . . .	19 31 0.13$_1$	57.47$_3$	− 2.40	+ 0.37	− 2.03	0.65	− 1.32
λ Draconis . . .	19 58 24.63$_3$	32.96$_3$	− 2.41	+ 0.42	− 1.99	1.28	− 2.55
β Cephei. . . .	19 59 30.58$_3$	27.82$_1$	− 1.60	+ 0.42	− 1.18	0.65	− 0.77
38 Cassiopeæ . .	20 23 5.62$_5$	53.78$_1$	− 0.60	+ 0.47	− 0.13	0.79	− 0.10
22 Camelopardalis .	20 38 24.29$_4$	33.63$_1$	− 2.08	+ 0.48	− 1.60	0.76	− 1.22
3 Ursæ Majoris. .	21 9 29.90$_1$	31.30$_1$	+ 1.20	+ 0.53	+ 1.73	0.50	+ 0.86
σ^2 Ursæ Majoris. .	22 21 21.94$_4$	37.03$_6$	− 1.03	+ 0.57	− 0.46	1.73	− 0.80
δ Draconis . . .	22 33 34.81$_3$	22.06$_1$	− 3.13	+ 0.59	− 2.54	0.72	− 1.83
ο Cephei. . . .	22 34 37.81$_5$	22.33$_1$	+ 0.14	+ 0.59	+ 0.73	0.79	+ 0.58
ι Cassiopeæ . .	23 9 56.53$_6$	0.32$_1$	− 3.15	+ 0.59	− 2.56	0.81	− 2.07
32 Ursæ Majoris. .	24 15 50.13$_3$	8.07$_1$	− 1.80	+ 0.57	− 1.23	0.65	− 0.80
α Draconis . . .	25 1 16.02$_{11}$	44.36$_1$	+ 0.38	+ 0.56	+ 0.94	0.86	+ 0.81
							$\Delta\phi = -0''.51$

It is not out of place here to remark that the number of reflection observations made in each year since 1868, with the Transit Circle, has been so small, that any attempt to fully discuss the observations, with a view to obtaining a trustworthy correction to the "zenith-point correction" must necessarily fail.

The scarcity of reflection observations is chiefly due to the fact that the apparatus employed in such observations was so defective and awkwardly constructed that its use was always unsatisfactory, while it was practically impossible to observe a southern star directly and by reflection at the same transit.

Until a sufficient number of good reflection observations are obtained, the reality of the computed value of ΔZ must be considered questionable.

Collecting the results from all the available data, the total systematic correction to be applied to an observed north-polar distance in 1874 is:

For objects north of the zenith:

Observed directly - - - - Div. Corr. $+0''.39 \sin(190°.3 + \Delta) - 0''.02 + 0''.51$
Observed by reflection - - - Div. Corr. $+0''.29 \sin(67°.4 + \Delta) + 0''.02 + 0''.51$

For objects south of the zenith:

Observed directly - - - - Div. Corr. $+0''.39 \sin(190°.3 + \Delta) + 0''.87 + 0''.51$
Observed by reflection - - - Div. Corr. $+0''.29 \sin(67°.4 + \Delta) - 0''.87 + 0''.51$

The numerical values of these expressions are given in Table VIII with the argument north-polar distance. The second column contains the corrections for the errors in the division of circle B. The third column contains the sums of the corrections for flexure of circle B, flexure of telescope, effect of gravity on the zenith-distance micrometer, and, in the case of reflection observations, curvature of the surface of the mercury. The fourth column contains the sum of the corrections for error in the assumed latitude and constant error in the zenith-point.

As the computed value of ΔZ is not the same for northern as for southern objects, to avoid an abrupt change at the zenith, the value is gradually changed between 46° and 56° north-polar distance. The fifth column contains the sum of all the corrections. Instead of forming a general table of corrections for reflection observations, the corrections were computed for such stars as were actually observed, and are given on the last page of Table VIII.

TABLE VIII.—*Systematic Corrections to be applied to the North-Polar Distances of Objects observed with the Transit Circle in* 1874.

DIRECT OBSERVATIONS.

N. P. D.	Division Correction.	Flexure.	Latitude, Zenith Point, etc.	Total.	N. P. D.	Division Correction.	Flexure.	Latitude, Zenith Point, etc.	Total.
°	"	"	"	"	°	"	"	"	"
0	+ 0.36	− 0.07	+ 0.49	+ 0.78	40	+ 0.19	− 0.30	+ 0.49	+ 0.38
1	.36	.08	.49	.77	41	.15	.30	.49	.34
2	.36	.08	.49	.77	42	.11	.31	.49	.29
3	.40	.09	.49	.80	43	.12	.31	.49	.30
4	.44	.10	.49	.83	44	.15	.32	.49	.32
5	+ 0.44	− 0.10	+ 0.49	+ 0.83	45	+ 0.14	− 0.32	+ 0.49	+ 0.31
6	.38	.11	.49	.76	46	.09	.32	.49	.26
7	.31	.12	.49	.68	47	+ 0.03	.33	.58	.28
8	.24	.12	.49	.61	48	− 0.06	.33	.67	.28
9	.18	.13	.49	.54	49	.11	.34	.76	.31
10	+ 0.18	− 0.14	+ 0.49	+ 0.53	50	− 0.13	− 0.34	+ 0.85	+ 0.38
11	.22	.14	.49	.57	51	.08	.34	0.94	.52
12	.27	.15	.49	.61	52	− 0.02	.35	1.03	.66
13	.27	.15	.49	.61	53	.00	.35	.12	.77
14	.26	.16	.49	.59	54	.00	.35	.21	.86
15	+ 0.26	− 0.17	+ 0.49	+ 0.58	55	.00	− 0.35	+ 1.29	+ 0.94
16	.27	.17	.49	.59	56	+ 0.05	.36	.38	1.07
17	.29	.18	.49	.60	57	.11	.36	.38	.13
18	.29	.18	.49	.60	58	.12	.36	.38	.14
19	.29	.19	.49	.59	59	.12	.36	.38	.14
20	+ 0.35	− 0.20	+ 0.49	+ 0.64	60	+ 0.13	− 0.37	+ 1.38	+ 1.14
21	.43	.20	.49	.72	61	.14	.37	.38	.15
22	.51	.21	.49	.79	62	.15	.37	.38	.16
23	.56	.21	.49	.84	63	.16	.37	.38	.17
24	.57	.22	.49	.84	64	.17	.38	.38	.17
25	+ 0.57	− 0.23	+ 0.49	+ 0.83	65	+ 0.19	− 0.38	+ 1.38	+ 1.19
26	.52	.23	.49	.78	66	.20	.38	.38	.20
27	.48	.24	.49	.73	67	.22	.38	.38	.22
28	.49	.24	.49	.74	68	.26	.38	.38	.26
29	.52	.25	.49	.76	69	.28	.38	.38	.28
30	+ 0.53	− 0.25	+ 0.49	+ 0.77	70	+ 0.27	− 0.38	+ 1.38	+ 1.27
31	.50	.26	.49	.73	71	.25	.39	.38	.24
32	.46	.26	.49	.69	72	.22	.39	.38	.21
33	.44	.27	.49	.66	73	.22	.39	.38	.21
34	.42	.27	.49	.64	74	.22	.39	.38	.21
35	+ 0.40	− 0.27	+ 0.49	+ 0.62	75	+ 0.22	− 0.39	+ 1.38	+ 1.21
36	.35	.28	.49	.56	76	.23	.39	.38	.22
37	.28	.29	.49	.48	77	.24	.39	.38	.23
38	.24	.29	.49	.44	78	.25	.39	.38	.24
39	.22	.30	.49	.41	79	.27	.39	.38	.26

TABLE VIII.—*Systematic Corrections, etc.*—Continued.

DIRECT OBSERVATIONS.

N. P. D.	Division Correction.	Flexure.	Latitude, Zenith Point, etc.	Total.	N. P. D	Division Correction.	Flexure.	Latitude, Zenith Point, etc.	Total.
°	"	"	"	"	°	"	"	"	"
80	+ 0.28	− 0.39	+ 1.38	+ 1.27	120	+ 0.53	− 0.30	+ 1.38	+ 1.61
81	.31	.39	.38	.30	121	.50	.30	.38	.58
82	.35	.39	.38	.34	122	.46	.29	.38	.55
83	.40	.39	.38	.39	123	.44	.29	.38	.53
84	.45	.39	.38	.44	124	.42	.28	.38	.52
85	+ 0.46	− 0.39	+ 1.38	+ 1.45	125	+ 0.40	− 0.27	+ 1.38	+ 1.51
86	.45	.39	.38	.44	126	.35	.27	.38	.46
87	.44	.39	.38	.43	127	.28	.27	.38	.39
88	.41	.39	.38	.40	128	.24	.26	.38	.36
89	.38	.39	.38	.37	129	.22	.26	.38	.34
90	+ 0.36	− 0.38	+ 1.38	+ 1.36	130	+ 0.19	− 0.25	+ 1.38	+ 1.32
91	.36	.38	.38	.36					
92	.36	.38	.38	.36	330	+ 0.13	+ 0.13	+ 0.49	+ 0.75
93	.40	.38	.38	.40	331	.14	.13	.49	.76
94	.44	.38	.38	.44	332	.15	.12	.49	.76
95	+ 0.44	− 0.38	+ 1.38	+ 1.44	333	.16	.11	.49	.76
96	.38	.38	.38	.38	334	.17	.10	.49	.76
97	.31	.37	.38	.32	335	+ 0.19	+ 0.10	+ 0.49	+ 0.78
98	.24	.37	.38	.25	336	.20	.09	.49	.78
99	.18	.37	.38	.19	337	.22	.09	.49	.80
100	+ 0.18	− 0.37	+ 1.38	+ 1.19	338	.26	.08	.49	.83
101	.22	.36	.38	.24	339	.28	.07	.49	.84
102	.27	.36	.38	.29	340	+ 0.27	+ 0.07	+ 0.49	+ 0.83
103	.27	.36	.38	.29	341	.25	.06	.49	.80
104	.26	.36	.38	.28	342	.22	.05	.49	.76
105	+ 0.26	− 0.35	+ 1.38	+ 1.29	343	.22	.05	.49	.76
106	.27	.35	.38	.30	344	.22	.04	.49	.75
107	.29	.35	.38	.32	345	+ 0.22	+ 0.03	+ 0.49	+ 0.74
108	.29	.35	.38	.32	346	.23	.02	.49	.74
109	.29	.34	.38	.33	347	.24	.02	.49	.75
110	+ 0.35	− 0.34	+ 1.38	+ 1.39	348	.25	.01	.49	.75
111	.43	.34	.38	.47	349	.27	.00	.49	.76
112	.51	.33	.38	.56	350	+ 0.28	.00	+ 0.49	+ 0.77
113	.56	.33	.38	.61	351	.31	.00	.49	.80
114	.57	.32	.38	.63	352	.35	− 0.01	.49	.83
115	+ 0.57	− 0.32	+ 1.38	+ 1.63	353	.40	.02	.49	.87
116	.52	.32	.38	.58	354	.45	.02	.49	.92
117	.48	.31	.38	.55	355	+ 0.46	− 0.03	+ 0.49	+ 0.92
118	.49	.31	.38	.56	356	.45	.04	.49	.90
119	.52	.30	.38	.60	357	.44	.05	.49	.88
					358	.41	.05	.49	.85
					359	.38	.06	.49	.81
					360	+ 0.36	− 0.07	+ 0.49	+ 0.78

TABLE VIII.—*Systematic Corrections, etc.*—Continued.

REFLECTION OBSERVATIONS.

Name.	North-Polar Distance.	Division Correction.	Flexure.	Latitude, Zenith Point, etc.	Total.
	°	″	″	″	″
4 Draconis	11.7	− 0.36	+ 0.28	+ 0.53	+ 0.45
ζ Ursæ Minoris	11.8	.36	.28	.53	.45
κ Cephei	12.7	.38	.29	.53	.44
γ Cephei	13.1	.38	.29	.53	.44
79 Draconis	16.9	.46	.29	.53	.36
11 Cephei	19.3	− 0.39	+ 0.29	+ 0.53	+ 0.43
κ Draconis	19.5	.38	.29	.53	.44
λ Draconis	20.0	.36	.29	.53	.46
β Cephei	20.0	.36	.29	.53	.46
ω Draconis	21.2	.31	.29	.53	.51
9 Camelopardalis	23.9	− 0.25	+ 0.29	+ 0.53	+ 0.57
ι Cephei	24.5	.25	.29	.53	.57
α Draconis	25.0	.24	.29	.53	.58
α Ursæ Majoris	27.6	.22	.29	.53	.60
α Cephei	27.9	.22	.29	.53	.60
α Cassiopeæ	34.2	− 0.26	+ 0.28	+ 0.53	+ 0.55
θ Bootis	37.6	.18	.28	.53	.63
η Ursæ Majoris	40.1	.15	.28	.53	.66
α Persei	40.6	.14	.28	.53	.67
ι Ursæ Majoris	41.5	.14	.27	.53	.66
δ Persei	42.6	− 0.12	+ 0.27	+ 0.53	+ 0.68
τ Herculis	43.4	.12	.27	.53	.68
α Cygni	45.2	.11	.27	+ .53	+ .69
β Geminorum	61.7	.17	.22	− .36	− .31
ε Bootis	62.4	.20	.22	.36	.34
ε Leonis	65.6	− 0.30	+ 0.21	− 0.36	− 0.45
δ Leonis	68.8	.43	.20	.36	.59
α Bootis	70.2	.46	.20	.36	.62
γ Geminorum	73.5	.51	.18	.36	.69
α Tauri	73.7	.50	.18	.36	.68
ζ Aquilæ	76.3	− 0.55	+ 0.17	− 0.36	− 0.74
α Leonis	77.4	.57	.17	.36	.76
ε Delphini	79.1	.56	.16	.36	.76
γ Aquilæ	79.7	.54	.16	.36	.74
ε Pegasi	80.7	.47	.15	.36	.68
o Piscium	81.5	− 0.41	+ 0.15	− 0.36	− 0.62
ξ^1 Ceti	81.7	.39	.15	.36	.60
ω Piscium	83.8	.29	.14	.36	.51
α Canis Minoris	84.5	.29	.14	.36	.51
α Ceti	86.4	.27	.13	.36	.50
δ Aquilæ	87.1	− 0.26	+ 0.12	− 0.36	− 0.50
π Aquarii	89.2	.27	.12	.36	.51
η Virginis	90.0	.27	.11	.36	.52
η Aquarii	90.8	.24	.11	.36	.49
α Aquarii	90.9	.23	.11	.36	.48
θ Aquarii	98.4	− 0.43	+ 0.07	− 0.36	− 0.72
β Libræ	98.9	.41	.07	.36	.70
α Virginis	100.5	− .36	.06	− .36	− 0.66
Polaris, S. P.	358.6	+ 0.26	+ 0.27	+ 0.53	+ 0.54

Since the assumed value of the latitude is 38° 53′ 38″.80, the value given by each year's observations will be $38° 53' 38''.80 + \Delta\varphi$.

The observed north-polar distances used in computing $\Delta\varphi$ had been corrected for constant error in the zenith-point, and, in order to separate the values of the latitude

obtained from direct and reflection observations, those corrections should be removed; hence,

Latitude from direct observations - - $= 38^\circ\ 53'\ 38''.80 + \Delta\varphi + \Delta Z$
Latitude from reflection observations - $= 38^\circ\ 53'\ 38''.80 + \Delta\varphi - \Delta Z$

The following table exhibits the results obtained from 1866 to 1874:

TABLE IX.

Year.	Latitude from Direct Observations.	Latitude from Reflection Observations.	Mean.
	° ′ ″	° ′ ″	″
1866	38 53 38.73	38 53 37.67	38.20
1867	39.16	37.48	38.32
1868	38.69	37.73	38.21
1869	38.62	38.90	38.76
1870	38.71	39.57	39.14
1871 } 1872 }	39.11	36.49	37.80
1873	38.91	37.89	38.40
1874	38 53 38.31	38 53 38.27	38.29

POSITIONS AND SEMI-DIAMETERS OF THE SUN, MOON, AND PLANETS, DEDUCED FROM OBSERVATIONS WITH THE TRANSIT CIRCLE IN 1874, AND COMPARED WITH THE TABLES.

The results of the observations are given on pages 385 to 396, and require very little explanation.

When both limbs of an object presenting a fully illuminated disk have been observed, the adopted position of the center is the mean of that of the two limbs given in the eighteenth column on the left-hand page and the seventeenth column on the right-hand page of the observations. When only one full limb has been observed, the right ascension of the center is derived from the observed place of the limb by applying the "Time of the semi-diameter passing the meridian" taken from the Ephemeris. The declination of the center is obtained by applying the semi-diameter of the Ephemeris.

If one of the limbs observed was defective, the observed difference of right ascension or declination of limbs is multiplied by the ratio of half this difference to the true semi-diameter, and the observed semi-diameter thus deduced is applied to the observed position of the full limb to obtain that of the center. The factors are determined as follows:

Let

i = the elongation of earth and sun as seen from the planet;
$b = \cos i$;
δ, δ' = declinations of planet and sun;
A = difference of right ascensions of planet and sun;
θ = the angle which the line of cusps makes with the meridian;
f, f' = factors by which the measured diameters in right ascension and declination must be multiplied to obtain true semi-diameters.

To find f, we have

$$\tan\theta = \frac{\cos\delta\tan\delta'}{\sin A} - \frac{\sin\delta}{\tan A}$$

When the planet is gibbous;

$$g = \cos\theta\sqrt{b^2+\tan^2\theta} = \cos\theta'' \qquad \text{when } \sin\theta'' = \cos\theta\sin i$$

$$g' = \sin\theta\sqrt{b^2+\cot^2\theta} = \cos\theta' \qquad \text{when } \sin\theta' = \sin\theta\sin i$$

$$f = \frac{1}{1+g} \text{ and } f' = \frac{1}{1+g'}$$

When the illuminated disk is a crescent,

$$g = \cos\theta \qquad f = \frac{1}{1+g}$$

$$g' = \sin\theta \qquad f' = \frac{1}{1+g'}$$

When the center of light of Mercury has been observed, the reduction to the center of the planet is denoted by ε, and its value is obtained from the empirical formulæ

$$n = \frac{(1-b)(5-b)}{12}$$

In right ascension, - - - - - - - - ε = semi-diameter $\times\ n\cos\theta$
In north-polar distance, - - - - - - ε = semi-diameter. $\times\ n\sin\theta$

The north-polar distances are also corrected for parallax in altitude, found at the foot of the pages of observations, and for errors of division, flexure, etc., taken from Table VIII.

A discussion of all the observations of the sun made in 1874 gives the following results:

TABLE X.—*Corrections to the Semi-diameters of the Sun, given in the American Ephemeris, obtained from the mean of all the measures made by each Observer in* 1874.

Observer.	Sidereal Time of Semi-diameter passing the Meridian.	Vertical Semi-diameter.
	s.	″
Eastman . .	— 0.05_{25}	— 0.22_{24}
Frisby . . .	— 0.01_{15}	— 0.73_{16}
Stone . . .	0.00_{16}	— 0.54_{14}
Skinner . .	— 0.08_{23}	— 0.38_{23}

The subscript figures indicate the number of observations on which each value depends.

When only one limb was observed, the quantity in the last column of the observations should be the semi-diameter of the Ephemeris, corrected by means of the above table; but in 1874 this correction was omitted in the "observations" by mistake. The correction is properly applied, however, in the final results on pages 385 and 386.

The places of the moon at the time of transit at Washington are not given, either in the American Ephemeris or the English Nautical Almanac, but are computed in the following manner: The observed right ascension of the center is reduced to Washington mean time, or, if only the north-polar distance is observed, the mean time of transit of the center is taken directly from the American Ephemeris. Increasing this quantity by $5^h\ 8^m\ 12^s$ gives Greenwich mean time, with which, as an argument, the tabular place is interpolated from the hourly ephemeris for Greenwich.

The places in the American Ephemeris and in the English Nautical Almanac are respectively those of Peirce's and Hansen's tables.

The observations of the major planets are compared with the data given in the American Ephemeris for the instant of transit at Washington. The places of Venus, according to Le Verrier's tables, are obtained by applying to the positions given in the American Ephemeris for the transit at Washington, the differences between the positions for Greenwich noon, given respectively in that Ephemeris and in the English Nautical Almanac.

The observations of the minor planets Ceres, Pallas, Juno, Vesta, and Astræa are compared with the ephemerides in the Appendix to the English Nautical Almanac, from which the position is interpolated for the difference in longitude. The other minor planets are compared with the ephemerides in the Berliner Jahrbuch.

The observed time of transit converted into Washington mean time and increased by $6^h\ 1^m.8$ gives the Berlin mean time of transit. Subtracting the "aberration time" of the Ephemeris leaves the Berlin mean time at which the light left the planet, and for this instant the position of the planet is interpolated from the Ephemeris in the Jahrbuch and compared with the observed place.

TABLE A.—*Absolute Determinations of the Collimation Constant of the Transit Circle in 1874.*

Date.	M	M'	$M+M'$	$\frac{0.512}{M+M'}$	c_T	T	$+0.004T$	c_0
1874.	r.	r.	r.	s.	s.	°	s.	s.
January 9	− 0.262	+ 0.252	− 0.010	− 0.005	− 0.025	51.0	+ 0.204	+ 0.179
February 16	− 0.230	+ 0.248	+ 0.018	+ 0.009	− 0.011	48.0	+ 0.192	+ 0.181
March 6	− 0.214	+ 0.243	+ 0.029	+ 0.015	− 0.005	43.0	+ 0.172	+ 0.167
28	− .212	+ .119	− 0.093	− 0.048	− .068	57.0	.228	.160
April 15	− 0.168	+ 0.064	− 0.104	− 0.053	− 0.073	62.0	+ 0.248	+ 0.175
May 1	+ 0.159	− 0.239	− 0.080	− 0.041	− 0.061	64.0	+ 0.256	+ 0.195
12	+ 0.098	.140	.042	.022	.042	58.0	.232	.190
25	− 0.048	− .099	− .147	− .075	− .095	75.0	.300	.205
June 9	+ 0.173	− 0.520	− 0.347	− 0.178	− 0.198	88.5	+ 0.354	+ 0.156
16	− 0.118	.059	.177	.091	.111	80.0	.320	.209
27	− 0.154	− .132	− .286	− .146	− .166	82.9	.332	.166
July 9	0.000	− 0.338	− 0.338	− 0.173	− 0.193	87.5	+ 0.350	+ 0.157
22	− 0.198	− .052	− .250	− .128	− .148	76.0	.304	.156
August 4	− 0.070	− 0.202	− 0.272	− 0.139	− 0.159	73.5	+ 0.294	+ 0.135
13	.154	.090	.244	.125	.145	79.5	.318	.173
24	− .200	− .038	− .238	− .122	− .142	67.5	.270	.128
September 7	− 0.296	+ 0.091	− 0.205	− 0.105	− 0.125	81.7	+ 0.327	+ 0.202
14	− 0.371	+ 0.046	.325	.166	.186	78.0	.312	.126
24	+ 0.161	− 0.368	− .207	− .106	− .126	70.5	.282	.156
October 5	− 0.116	+ 0.020	− 0.096	− 0.049	− 0.069	54.5	+ 0.218	+ 0.149
16	.150	.076	.074	.038	.058	58.0	.232	.174
28	− .156	− .039	− .117	− .060	− .080	60.3	.241	.161
November 2	− 0.221	+ 0.240	+ 0.019	+ 0.010	− 0.010	42.5	+ 0.170	+ 0.160
12	.220	.248	.028	.014	.006	45.0	.180	.174
23	− .228	− .230	− .002	− .001	− .019	54.5	.218	.199
December 4	+ 0.079	− 0.119	− 0.020	− 0.010	− 0.030	46.5	+ 0.186	+ 0.156
14	.087	.066	+ 0.021	+ 0.011	.009	48.5	.194	.185
26	− .102	− .063	+ 0.039	+ 0.020	.000	39.2	.157	.157
1875.								
January 2	− 0.320	− 0.213	+ 0.107	+ 0.055	+ 0.035	33.5	+ 0.134	+ 0.169

TABLE B.—*Constants used in the Reduction of Transit Circle Observations in* 1874.

A * affixed to a value of b indicates that it is an interpolated value; affixed to an azimuth constant indicates that it is an interpolated value, or has been derived by least squares from all the observations on that day.

Date.		τ	c	b	a	Date.		τ	c	b	a
1874.		°	s.	s.	s.	1874.		°	s.	s.	s.
January	9.0	45	0.00	+ 1.12	+ 0.83	February	17.0	40	+ 0.02	+ 0.92	+ 0.53
	9.3	.	0.00	1.10	0.83		17.4	34	0.04	0.98	0.53
	9.5	.	0.00	1.10	0.85		18.4	29	+ 0.06	0.99	0.26
	10.0	42	+ 0.01	1.11	0.67		21.3	62	− 0.07	+ 0.84	0.56
	10.4	42	0.01	1.08	0.60		26.0	42	+ 0.01	− 0.13	0.18
	10.4	.	+ 0.01	+ 1.08	+ 0.67		26.5	32	+ 0.05	− 0.14	+ 0.14
	10.8	32	0.05	1.11	0.67		27.4	32	0.05	0.17	0.00
	11.4	34	0.04	0.88	0.30		28.4	36	+ 0.03	0.13	0.11
	11.8	33	0.04	1.07	0.43	March	1.4	44	0.00	0.22	+ 0.10
	12.0	40	0.02	1.06	0.36		2.0	55	− 0.04	0.24	− 0.11
	12.3	33	+ 0.04	+ 0.95	+ 0.36		2.3	46	− 0.01	− 0.25	− 0.12
	14.4	30	0.06	0.95	− 0.02		2.4	46	0.01	0.25	− 0.11
	14.9	20	0.10	0.99	0.16		4.0	67	− 0.09	0.28	+ 0.67
	15.4	14	0.12	0.94	0.16		4.6	42	+ 0.01	0.26	0.67
	16.4	18	0.10	0.80	0.52		7.6	39	0.02	0.21	0.21
	17.0	30	+ 0.06	+ 0.81	− 0.54		9.4	37	+ 0.03	− 0.25	+ 0.07
	17.4	24	0.08	0.81	0.54		10.4	42	0.01	0.26	− 0.15
	20.0	46	+ 0.01	0.58	0.77		10.7	33	0.04	0.26	0.15
	22.2	62	− 0.07	0.80	− 0.09		11.0	41	0.01	0.28	0.28
	23.3	56	− 0.05	0.90	+ 0.15*		11.4	36	0.03	0.28	0.09
	24.4	34	+ 0.04	+ 1.10	+ 0.83		12.4	34	+ 0.04	− 0.27	− 0.22
	26.1	31	0.05	1.14	0.21		13.4	27	0.07	0.20	0.42
	28.5	41	0.01	0.96	0.38		14.0	35	0.04	0.29	0.60
	29.0	44	0.00	1.06	0.17		14.3	35	+ 0.04	0.26	− 0.48
	29.4	41	0.01	0.99	0.17		19.4	65	− 0.08	0.37	+ 0.56
	31.5	35	+ 0.04	+ 0.99	+ 0.08		20.5	44	0.00	− 0.20	+ 0.62
February	4.0	36	0.03	0.89	− 0.26		21.4	49	− 0.02	0.13	+ 0.74
	4.5	25	0.08	1.01	0.26		24.0	33	+ 0.04	0.11	− 0.10
	10.0	34	0.01	0.90	0.40		24.4	33	+ 0.04	0.16	0.10
	10.4	27	0.07	0.91	0.40		25.4	48	− 0.02	0.21	0.11
	11.5	36	+ 0.03	+ 0.86	− 0.37		26.5	54	− 0.05	− 0.27	− 0.05
	12.0	45	0.00	0.89	0.51		28.0	52	0.04	0.26	0.06
	12.4	38	+ 0.02	0.89	− 0.51		28.5	48	0.03	0.35	0.06
	16.0	55	− 0.04	0.93	+ 0.62		29.4	47	0.02	0.32	0.15
	16.5	42	+ 0.01	+ 0.98	+ 0.62		30.0	55	− 0.05	− 0.36	− 0.24

TABLE B.—*Constants used in the Reduction of Transit Circle Observations*—Continued.

Date.	τ	c	b	a	Date.	τ	c	b	a
1874.	°	s.	s.	s.	1874.	°	s.	s.	s.
March 30.5	50	− 0.03	− 0.36	− 0.24	May 30.5	71	− 0.12	− 0.44	+ 0.13
April 4.5	32	+ 0.04	0.26	0.32	June 1.0	82	0.16	0.38	− 0.04
10.8	37	+ 0.02	0.16	0.54	1.5	64	0.09	0.41	0.04
11.1	62	− 0.08	0.22	0.54	2.1	74	0.13	0.41	0.36*
11.8	28	+ 0.05	0.31	0.54	4.3	73	0.13	0.45	− 0.46
13.0	48	− 0.03	− 0.35	− 0.71	9.0	94	− 0.21	− 0.26	+ 1.02
13.5	46	0.02	0.30	− 0.71	9.4	88	0.19	0.23	1.26
21.1	60	0.07	0.32	+ 0.46	9.9	83	0.16	0.18	1.26
21.5	50	0.03	0.17	0.46	13.0	72	0.12	0.25	0.38
22.4	51	0.04	0.13	0.62*	13.4	64	0.09	0.28	0.38
26.4	48	− 0.02	− 0.28	+ 0.08	15.1	72	− 0.12	− 0.25	+ 0.30*
27.0	60	0.07	0.30	− 0.11	15.3	72	0.12	0.25	0.30*
27.3	51	− 0.04	0.30	0.11	17.5	68	0.11	0.36	0.36
29.5	39	+ 0.01	0.33	0.07	18.0	86	0.18	0.38	0.27
30.0	56	− 0.06	0.33	0.31	18.5	67	0.10	0.40	0.27
May 3.3	53	− 0.04	− 0.42	− 0.34	19.0	82	− 0.16	− 0.38	+ 0.21*
3.6	47	0.02	0.37	0.34	19.4	73	0.13	0.40	0.21*
5.4	52	0.04	0.39	0.25	20.4	71	0.12	0.42	0.14
5.8	44	0.01	0.30	0.25	21.3	78	0.15	0.43	0.05
6.7	57	0.06	0.31	0.25	22.1	90	0.19	0.39	0.04
7.0	59	− 0.07	− 0.49	− 0.42	22.5	76	− 0.14	− 0.39	+ 0.04
7.3	54	0.05	0.47	0.42	23.0	92	0.20	0.47	0.04*
7.8	42	0.00	0.39	0.42	24.5	74	0.13	0.40	0.36
8.4	66	0.10	0.45	0.09	25.0	84	0.17	0.48	0.22*
8.8	57	0.06	0.47	0.09	28.6	79	0.15	0.45	0.19
9.5	69	− 0.11	− 0.52	− 0.06	29.0	91	− 0.20	− 0.42	+ 0.41
11.0	84	0.17	0.52	0.07	29.5	81	0.16	0.39	+ 0.41
11.5	52	0.04	0.46	0.07	July 5.5	69	0.11	0.41	− 0.15
13.4	67	0.10	0.45	0.13	6.0	77	0.14	0.48	+ 0.04
18.4	55	0.05	0.41	0.23	6.5	70	0.11	0.39	0.04
19.0	67	− 0.10	− 0.43	− 0.62	6.7	67	− 0.10	− 0.36	+ 0.04
19.4	60	0.07	0.43	0.62	7.0	76	0.14	0.44	− 0.21
21.4	59	0.07	0.44	0.59	7.5	73	0.13	0.46	0.21
22.5	55	0.05	0.36	0.59	8.5	78	0.15	0.43	0.19
26.5	60	0.07	0.40	0.09	8.7	75	0.13	0.47	0.19
27.1	70	− 0.11	− 0.48	− 0.24	9.0	90	− 0.19	− 0.38	− 0.29*
27.5	62	0.08	0.47	0.24	10.0	86	0.18	0.47	0.22*
28.0	80	0.15	0.39	0.26	13.0	81	0.16	0.43	0.22
28.4	75	0.13	0.47	0.26	13.5	76	0.14	0.41	0.22
29.5	71	− 0.12	− 0.39	− 0.13	15.0	86	− 0.18	− 0.52	− 0.26

TABLE B.—*Constants used in the Reduction of Transit Circle Observations*—Continued.

Date.		τ	c	b	a	Date.		τ	c	b	a
1874.		°	s.	s.	s.	1874.		°	s.	s.	s.
July	15.4	81	− 0.16	− 0.51	− 0.26	October	2.0	69	− 0.11	− 0.60	− 0.74
	17.1	77	0.14	0.45	0.19		2.4	63	0.08	0.54	0.74
	17.5	71	0.12	0.43	0.19		2.8	48	0.02	0.56	0.74
	18.3	79	0.15	0.47	0.25*		3.0	62	0.08	0.60	0.71
	19.2	82	0.16	0.53	0.35		3.3	63	0.08	0.51	0.71
	23.0	80	− 0.15	− 0.48	− 0.30		5.0	56	− 0.06	− 0.47	− 0.97
	23.4	73	0.13	0.47	0.30		5.4	50	0.03	0.48	0.97
	25.1	79	0.15	0.44			9.0	63	0.08	0.52	0.84
	30.0	73	0.13	0.52	0.41		10.0	64	0.09	0.54	0.75
	30.5	68	0.11	0.47	0.41		10.4	64	0.09	0.54	0.75
August	3.3	73	− 0.13	− 0.42	− 0.19		10.5	62	− 0.08	− 0.59	− 0.75
	4.4	70	0.11	0.56	0.32		12.5	49	0.03	0.50	0.97
	4.8	60	0.07	0.47	0.32		13.5	44	0.01	0.44	0.94
	6.0	82	0.16	0.40	0.40*		14.4	43	0.00	0.50	1.20
	15.0	75	0.13	0.42	0.45		15.0	56	0.06	0.49	1.20
	15.4	71	− 0.12	− 0.41	− 0.45		15.5	47	− 0.02	− 0.47	− 1.20
	19.0	80	0.15	0.43	0.47		16.4	46	0.02	0.48	1.23
	19.5	79	0.15	0.42	0.47		16.5	46	0.02	0.45	1.09
	26.1	76	0.14	0.50	0.68		17.4	59	0.07	0.50	1.10*
	27.3	61	0.08	0.43	0.73		18.4	55	0.05	0.55	1.14
	31.6	63	− 0.09	− 0.40	− 0.80*		19.0	52	− 0.04	− 0.53	− 1.12
September	9.1	82	0.16	0.44	0.62		19.4	47	0.02	0.49	1.12
	9.4	70	0.11	0.48	0.62		20.0	58	0.06	0.40	1.13
	18.0	79	0.15	0.56	0.05		20.4	52	0.04	0.47	1.13
	18.4	71	0.12	0.57	0.05		20.5	47	0.02	0.46	1.05
	21.0	65	− 0.09	− 0.65	− 0.15		22.5	56	− 0.06	− 0.48	− 1.05
	21.4	60	0.07	0.64	0.15		23.0	64	0.09	0.51	1.11
	22.0	65	0.09	0.53	0.33		23.5	54	0.05	0.46	1.11
	22.4	62	0.08	0.52	0.33		25.5	52	0.04	0.47	1.12
	23.0	66	0.10	0.53*	0.32		26.0	62	0.08	0.50	1.09
	23.5	63	− 0.09	− 0.54	− 0.32		26.5	51	− 0.04	− 0.42	− 1.09
	24.0	70	0.11	0.65	0.39		27.1	71	0.12	0.47	1.29
	24.5	63	0.09	0.59	0.39		28.4	65	0.09	0.35	0.97
	25.0	71	0.12	0.61	0.30		28.7	52	0.04	0.34	0.97
	25.4	64	0.09	0.60	0.30		29.0	70	0.11	0.41	1.09
	26.0	71	− 0.12	− 0.61	− 0.34		29.4	69	− 0.11	− 0.44	− 1.02
	26.5	66	0.10	0.58	0.34		29.5	67	− 0.10	0.49	1.02
	30.8	48	0.03	0.52	0.76		31.5	38	+ 0.02	0.39	1.03
October	1.1	55	0.05	0.49	0.72	November	3.4	41	0.00	0.36	1.17
	1.8	54	− 0.05	− 0.52	− 0.72		4.1	54	− 0.05	− 0.42	− 1.18

TABLE B.—*Constants used in the Reduction of Transit Circle Observations*—Continued.

Date.		τ	c	b	a	Date.		τ	c	b	a
1874.		°	s.	s.	s.	1874.		°	s.	s.	s.
November	4.4	49	− 0.03	− 0.37	− 1.18	December	5.4	35	+ 0.03	− 0.27	− 0.85
	6.0	65	0.09	0.40	1.19		7.1	45	− 0.01	0.28	0.74
	6.3	53	0.04	0.37	1.19		8.1	37	+ 0.02	0.28	0.52
	7.0	53	0.04	0.43	1.27		8.5	30	0.05	0.21	0.52
	7.4	47	0.02	0.43	1.27		9.5	36	0.02	0.21	0.58
	11.0	63	− 0.08	− 0.41	− 1.14		9.8	31	+ 0.04	− 0.20*	− 0.76
	12.0	50	− 0.03	0.38	1.20		11.0	44	− 0.01	0.21	0.92
	12.4	41	0.00	0.31	1.20		11.6	37	+ 0.02	0.15	0.92
	13.0	42	0.00	0.24	1.14		14.4	30	0.05	0.23	0.76
	13.5	33	+ 0.04	0.18	1.14		14.7	21	0.08	0.22*	0.74
	14.1	36	+ 0.02	− 0.15	− 1.16		15.0	28	+ 0.06	− 0.20	− 0.88
	14.4	34	+ 0.03	0.21	1.16		15.5	24	0.07	0.18*	0.88
	16.1	42	0.00	0.30	1.24		15.7	22	0.08	0.17	0.88
	16.4	43	0.00	0.29	1.24		17.7	33	0.04	0.25	0.88
	20.9	67	− 0.10	0.14*	1.31		18.0	36	0.02	0.28	0.94
	21.5	33	+ 0.04	− 0.14	− 1.31		18.4	36	+ 0.02	− 0.28	− 0.94
	24.1	48	− 0.02	0.26	0.71		19.0	44	− 0.01	0.20	0.96
	25.0	36	+ 0.02	0.13	0.34		19.4	43	0.00	0.25	0.96
	25.5	33	+ 0.04	0.13	0.34		21.0	41	0.00	0.27	1.04
	27.0	44	− 0.01	0.15	0.37		21.4	33	+ 0.04	0.22	1.04
	27.5	41	0.00	− 0.17	− 0.41		22.5	38	+ 0.02	− 0.23	− 0.97
	28.4	50	− 0.03	0.27	0.47		23.0	44	− 0.01	0.15	0.88
	30.1	28	+ 0.06	0.13	0.52		23.5	36	+ 0.02	0.13	0.88
December	1.4	32	+ 0.04	0.16	0.61		24.7	32	0.04	0.09	0.85
	2.4	50	− 0.03	0.32	0.71		25.7	32	0.04	0.06	− 0.84
	3.0	60	− 0.07	− 0.45	− 0.90*		30.0	32	+ 0.04	− 0.14	+ 0.09
	4.0	47	− 0.02	0.31	0.64		31.8	20	+ 0.09	− 0.05	− 0.05
	4.4	36	+ 0.02	0.30	0.64						
	4.8	29	0.05	0.27*	0.63						
	5.0	35	+ 0.03	− 0.26	− 0.85						

TABLE C.—*Adopted Corrections to the Positions of the Clock Stars given in the American Ephemeris for the Year 1874.*

		s.			s.			s.
α	Andromedæ	+ 0.02	κ	Cancri	− 0.01	γ^2	Sagittarii	+ 0.01
γ	Pegasi	.00	α	Hydræ	− .03	μ^1	Sagittarii	.00
β	Ceti	+ .05	ϵ	Leonis	− .06	η	Serpentis	+ .06
ϵ	Piscium	+ .02	μ	Leonis	− .01	1	Aquilæ	+ .07
θ^1	Ceti	+ .02	α	Leonis	− .04	α	Lyræ	+ .02
η	Piscium	+ 0.07	γ^1	Leonis	− 0.02	β	Lyræ	+ 0.03
o	Piscium	− .03	ρ	Leonis	− .07	σ	Sagittarii	+ .01
β	Arietis	+ .02	l	Leonis	.00	ζ	Aquilæ	+ .08
α	Arietis	+ .01	δ	Leonis	− .06	d	Sagittarii	+ .02
ξ^1	Ceti	+ .04	δ	Crateris	− .02	δ	Aquilæ	+ .05
γ	Ceti	0.00	τ	Leonis	− 0.02	κ	Aquilæ	+ 0.04
α	Ceti	+ .02	υ	Leonis	− .04	γ	Aquilæ	+ .03
ζ	Arietis	− .04	β	Leonis	− .02	α	Aquilæ	+ .04
η	Tauri	.00	o	Virginis	− .02	β	Aquilæ	+ .03
ζ	Persei	− .01	η	Virginis	− .02	τ	Aquilæ	+ .02
γ^1	Eridani	+ 0.04	β	Corvi	− 0.04	α^2	Capricorni	+ 0.04
γ	Tauri	+ .01	12	Canum Venaticorum	.00	π	Capricorni	+ .03
ϵ	Tauri	− .01	θ	Virginis	− .04	ϵ	Delphini	+ .05
α	Tauri	− .02	α	Virginis	− .02	α	Cygni	+ .02
ι	Aurigæ	− .04	ζ	Virginis	.00	μ	Aquarii	+ .07
11	Orionis	− 0.07	η	Bootis	− 0.05	ν	Cygni	+ 0.06
β	Orionis	.00	α	Bootis	.00	61^1	Cygni	− .04
β	Tauri	− .02	ϵ	Bootis	− .02	ζ	Cygni	+ .01
δ	Orionis	− .03	α^2	Libræ	− .01	1	Pegasi	− .05
α	Leporis	− .04	β	Libræ	.00	β	Aquarii	+ .03
ϵ	Orionis	− 0.01	μ^1	Bootis	− 0.01	ξ	Aquarii	+ 0.02
α	Columbæ	− .04	α	Coronæ Borealis	.00	ϵ	Pegasi	+ .01
α	Orionis	− .03	α	Serpentis	+ .02	μ	Capricorni	+ .03
μ	Geminorum	− .04	ϵ	Serpentis	.00	α	Aquarii	+ .03
γ	Geminorum	− .03	δ	Scorpii	+ .01	θ	Aquarii	+ .02
α	Canis Majoris	− 0.08	β^1	Scorpii	+ 0.03	π	Aquarii	+ 0.02
ϵ	Canis Majoris	− .05	δ	Ophiuchi	+ .02	η	Aquarii	+ .03
δ	Canis Majoris	− .05	α	Scorpii	− .01	ζ	Pegasi	+ .06
δ	Geminorum	− .06	ζ	Ophiuchi	.00	λ	Aquarii	+ .08
α^2	Geminorum	+ .24	η	Herculis	+ .01	α	Piscis Australis	+ .04
α	Canis Minoris	− 0.16	κ	Ophiuchi	+ 0.04	α	Pegasi	+ 0.03
β	Geminorum	− .03	α^1	Herculis	+ .02	θ	Piscium	+ .06
ϕ	Geminorum	− .08	b	Ophiuchi	+ .03	ι	Piscium	.00
15	Argus	− .06	α	Ophiuchi	+ .03	ω	Piscium	+ .01
ϵ	Hydræ	− .04	μ	Herculis	.00			

TABLE D.—*Adopted Corrections and Rates of the Kessels Sidereal Clock in the Year* 1874.

Mean Day and Sidereal Hour.	Observer.	Clock Correction from Mean of Observations.	Clock Correction Corrected for Personal Equation.	Apparent Daily Rate between Groups.	Adopted Daily Rate.	Mean Day and Sidereal Hour.	Observer.	Clock Correction from Mean of Observations.	Clock Correction Corrected for Personal Equation.	Apparent Daily Rate between Groups.	Adopted Daily Rate.
1874. d. h.		s.	s.	s.	s.	1874. d. h.		s.	s.	s.	s.
Jan. 9 2.0	F.	+ 5.51	+ 5.45		+ 0.22	Feb. 28 9.9	Sk.	+ 11.86	+ 11.63		− 0.26
				+ 0.22						− 0.18	
9 7.2	Ha.	5.69	5.50		0.16	Mar. 1 8.6	E.	11.46	11.46		+ 0.05
				0.10						+ 0.27	
10 1.1	S.	5.60	5.58		0.05	1 22.7	F.	11.68	11.62		+ 0.06
				0.00						− 0.15	
10 6.6	Ha.	5.78	5.58		0.27	2 7.0	Ha.	11.76	11.56		− 0.15
				+ 0.54							
11 6.4	Ha.	6.16	5.97		+ 0.15	2 10.1	F.	11.64	11.58		− 0.15
				− 0.23						− 0.15	
11 22.8	E.	5.81	5.81		− 0.14	4 9.0	Sk.	11.49	11.26		+ 0.05
				0.05						+ 0.26	
14 4.4	S.	5.72	5.70		0.23	7 13.5	E.	12.00	12.08		− 0.05
				0.42						− 0.16	
15 0.1	Sk.	5.59	5.36		0.26	9 8.6	E.	11.80	11.80		0.23
				0.10						0.30	
16 6.2	E.	5.24	5.24		0.26	10 10.4	F.	11.54	11.48		0.20
				0.43						0.10	
17 23.2	Sk.	5.17	4.94		− 0.26	10 20.6	E.	11.46	11.44		0.38
				− 0.08						0.60	
19 19.8	E.	4.72	4.72		+ 0.06	11 7.4	E.	11.04	11.04		0.48
				+ 0.19							
22 0.2	S.	5.15	5.13		0.22	11 10.4	S.	11.01	10.99		0.48
				0.25						0.35	
23 2.0	Sk.	5.62	5.39		0.18	12 7.8	E.	10.69	10.69		0.50
				0.11						0.64	
24 4.5	E.	5.51	5.51		0.24	13 7.5	E.	10.05	10.05		0.64
				0.36						0.65	
25 18.3	S.	6.10	6.08		0.26	14 6.5	E.	9.49	9.49		− 0.37
				0.16						− 0.10	
28 7.0	E.	6.48	6.48		0.24	19 9.2	E.	8.99	8.99		+ 0.04
				0.32						+ 0.18	
29 1.1	F.	6.78	6.72		0.25	20 10.4	Sk.	9.41	9.18		0.24
				0.18						0.31	
31 8.3	Sk.	7.36	7.13		0.21	21 8.6	E.	9.46	9.46		0.28
				0.24						0.24	
Feb. 4 21.6	Sk.	8.25	8.02		0.21	24 9.2	Sk.	10.41	10.18		0.14
										0.03	
4 9.1	F.	8.13	8.07		0.21	25 8.0	E.	10.21	10.21		0.02
				0.18						0.01	
10 3.5	E.	9.18	9.18		0.16	26 11.1	F.	10.28	10.22		0.08
				0.14						0.15	
11 8.2	S.	9.36	9.34		0.20	28 7.6	Sk.	10.74	10.51		0.23
				0.25						0.31	
12 1.7	F.	9.57	9.52		0.24	29 9.1	E.	10.84	10.84		0.22
				0.23						+ 0.12	
16 4.4	Sk.	10.69	10.46		0.24	30 11.4	F.	11.03	10.97		0.05
				0.25						− 0.02	
17 2.6	E.	10.69	10.69		0.24	April 3 10.0	F.	10.85	10.79		0.08
				0.23						+ 0.15	
18 8.8	F.	11.03	10.98		0.20	4 10.6	S.	10.96	10.94		0.10
				0.18						0.05	
21 7.4	Ha.	11.71	11.51		+ 0.17	10 20.3	E.	11.28	11.28		0.06
				+ 0.15						0.08	
26 7.0	Ha.	12.44	12.25		− 0.05	11 3.1	F.	11.52	11.46		0.09
										0.10	
26 7.8	F.	12.36	12.30		− 0.05	13 8.8	Sk.	11.90	11.67		0.15
				− 0.24						0.19	
27 5.7	Ha.	12.23	12.04		0.29	21 8.8	Sk.	13.42	13.19		0.18
										0.17	
27 10.1	S.	+ 12.00	+ 11.98		− 0.29	22 10.1	E.	+ 13.37	+ 13.37		+ 0.16
				− 0.34						+ 0.15	

TABLE D.—*Adopted Corrections and Rates of the Kessels Sidereal Clock, etc.*—Continued.

Mean Day and Sidereal Hour.	Observer.	Clock Correction from Mean of Observations.	Clock Correction Corrected for Personal Equation.	Apparent Daily Rate between Groups.	Adopted Daily Rate.	Mean Day and Sidereal Hour.	Observer.	Clock Correction from Mean of Observations.	Clock Correction Corrected for Personal Equation.	Apparent Daily Rate between Groups.	Adopted Daily Rate.
1874. d. h.		s.	s.	s.	s.	1874. d. h.		s.	s.	s.	s.
April 26 11.5	E.	+ 13.98	+ 13.98		+ 0.16	June 4 14 0	Sk.	+ 14.63	+ 14.40		− 0.13
				+ 0.18						− 0.11	
27 2.9	F.	14.18	14.13		0.08	8 1.7	S.	13.91	13.89		0.24
										0.36	
27 10.1	E.	14.13	14.13		0.08	9 13.0	E.	13.69	13.69		0.29
				− 0.02						0.22	
29 10.4	E.	14.07	14.07		0.13	9 4.5	F.	13.31	13.25		
29 11.6	Sk.	14.30	14.11		0.13	13 9.1	E.	12.84	12.84		0.51
										0.79	
29 12.1	Ha.	14.29	14.06		0.13	15 8.0	S.	11.32	11.30		0.74
				+ 0.28						0.70	
30 3.8	E.	14.27	14.27		+ 0.08	17 17.2	E.	9.46	9.64		0.66
				− 0.12						0.63	
May 3 10.8	E.	13.87	13.87		− 0.06	18 9.8	F.	9.26	9.21		0.68
										0.74	
3 17.2	Sk.	14.06	13.83		− 0.06	19 10.8	S.	8.46	8.44		0.79
				0.00						0.84	
5 11.5	Ha.	14.04	13.85		+ 0.26	20 13.1	Sk.	7.75	7.52		0.74
				− 0.53						0.64	
5 19.7	F.	13.72	13.67		− 0.15	21 12.7	E.	6.89	6.89		0.64
				+ 0.22						0.63	
6 20.1	S.	13.93	13.91		+ 0.22	22 14.8	F.	6.24	6.21		0.60
				0.22						0.57	
7 10.2	Sk.	14.25	14.02		0.14	22 4.3	E.	5.89	5.89		0.60
				0.05						0.62	
8 14.7	E.	14.08	14.08		0.13	24 16.3	Sk.	5.09	4.86		0.50
				0.21						0.39	
9 12.9	F.	14.33	14.27		+ 0.28	25 6.0	E.	4.64	4.64		0.46
				+ 0.36						0.53	
10 0.0	S.	14.82	14.80		− 0.03	28 19.7	F.	2.83	2.77		0.44
				− 0.42						0.36	
11 7.2	Sk.	14.94	14.70		0.03	29 12.7	E.	2.51	2.51		0.38
										0.40	
11 11.4	Ha.	14.84	14.64		0.03	July 5 19.1	E.	+ 0.01	+ 0.01		0.52
										0.65	
11 12.9	E.	14.66	14.66		− 0.03	6 14.4	Sk.	− 0.28	− 0.51		0.58
				+ 0.11						0.51	
13 13.9	F.	14.95	14.90		+ 0.12	7 13.2	E.	0.98	0.98		0.57
				0.13						− 0.63	
18 14.6	S.	15.56	15.54		0.09	8 22.1	Sk.	1.61	1.84		0.29
				0.05						+ 0.06	
19 9.6	Sk.	15.82	15.58		+ 0.04	8 6.5	S.	1.80	1.82		0.20
				+ 0.03						− 0.47	
21 12.9	F.	15.70	15.64		− 0.03	9 7.2	Sk.	2.04	2.28		0.40
				− 0.09						0.34	
22 14.8	S.	15.56	15.54		0.12	13 12.1	S.	3.34	3.36		0.32
				− 0.15						0.31	
26 15.7	S.	14.97	14 95		− 0.02	15 11.7	E.	3.97	3.97		0.38
				+ 0.12						0.45	
27 11.8	Sk.	15.28	15.05		+ 0.05	17 15.9	S.	4.92	4.94		0.53
				− 0.02						0.61	
28 9.7	E.	15.03	15.03		− 0.04	18 15.3	E.	5.53	5.53		0.54
				0.05						0.47	
29 16.7	F.	15.01	14.96		0.06	19 14.1	E.	5.98	5.98		0.52
				0.07						0.58	
30 15.7	S.	14.89	14.87		0.06	23 11.4	E.	8.24	8.24		0.62
				0.04						0.66	
June 1 11.9	E.	14.79	14.79		0.05	30 12.4	E.	12.90	12.90		0.63
				0.06						0.59	
2 6.3	F.	+ 14.79	+ 14.74		− 0.10	Aug. 3 16.8	S.	− 15.35	− 15.37		− 0.62
				− 0.15						− 0.64	

TABLE D.—*Adopted Corrections and Rates of the Kessels Sidereal Clock, etc.*—Continued.

Mean Day and Sidereal Hour.	Observer.	Clock Correction from Mean of Observations.	Clock Correction Corrected for Personal Equation.	Apparent Daily Rate between Groups.	Adopted Daily Rate.	Mean Day and Sidereal Hour.	Observer.	Clock Correction from Mean of Observations.	Clock Correction Corrected for Personal Equation.	Apparent Daily Rate between Groups.	Adopted Daily Rate.
1874. d. h.		s.	s.	s.	s.	1874. d. h.		s.	s.	s.	s.
Aug. 4 23.3	E.	— 16.18	— 16.18		— 0.72	Oct. 19 19.5	E.	— 50.80	— 50.80		— 0.30
				— 0.80						— 0.32	
5 7.7	S.	17.24	17.26		0.68	20 22.2	F.	51.04	51.10		0.40
				0.56							
15 13.4	Sk.	22.16	22.39		0.49	20 1.9	E.	51.24	51.24		0.40
				0.42						0.47	
19 15.3	Sk.	23.87	24.10		0.42	22 1.5	Sk.	51.52	51.75		0.33
				0.43							
25 9.3	S.	26.96	26.98		0.61	22 2.2	E.	51.60	51.60		0.33
				0.79						0.19	
27 20.4	Sk.	27.91	28.14		0.62	23 22.0	E.	51.84	51.84		0.15
				0.45						0.11	
31 3.6	Sk.	29.83	30.06		0.32	25 1.8	E.	52.08	52.08		0.15
				0.20						0.18	
Sept. 9 18.8	F.	31.77	31.82		0.24	26 20.7	Sk.	52.22	52.45		0.12
				0.28							
18 17.0	F.	34.28	34.34		0.32	26 2.1	E.	52.26	52.26		0.12
				0.37						0.05	
21 15.5	E.	35.43	35.43		0.47	27 16.4	E.	52.29	52.29		0.25
				0.61						0.45	
22 18.6	F.	36.05	36.11		0.70	28 3.9	F.	52.90	52.95		0.24
				0.80						0.02	
23 17.3	S.	36.84	36.86		0.78	29 18.7	S.	52.94	52.96		0.12
				0.75						0.23	
24 16.2	Sk.	37.34	37.57		0.76	29 1.8	E.	53.03	53.03		0.23
				0.76						0.23	
25 17.1	E.	38.36	38.36		0.70	31 4.4	E.	53.52	53.52		0.28
				0.63						0.32	
26 18.0	F.	38.95	39.01		0.64	Nov. 3 0.9	Sk.	54.20	54.43		0.36
				0.65						0.41	
30 6.9	F.	41.92	41.97		0.71	4 22.4	E.	54.79	54.79		0.40
				0.77						0.37	
Oct. 1 21.2	S.	42.40	42.42		0.81	6 22.7	S.	55.52	55.54		0.29
				0.85						0.21	
2 19.9	Sk.	43.00	43.23		0.79	7 19.3	Sk.	55.48	55.71		0.22
				0.73						0.24	
3 15.5	E.	43.82	43.82		0.58	10 14.0	Sk.	56.39	56.62		0.14
				0.42						0.04	
4 13.9	S.	44.60	44.62		0.43	12 21.8	E.	56.67	56.67		0.12
				0.44						0.21	
8 10.6	S.	46.32	46.34		0.48	13 21.4	F.	56.73	56.79		0.12
				0.51							
10 23.1	E.	47.11	47.11		0.52	13 3.5	E.	56.93	56.93		0.12
				0.53						0.02	
12 1.1	F.	48.15	48.21		0.60	14 20.3	S.	56.79	56.81		0.23
				0.68						0.44	
13 20.7	S.	48.75	48.77		0.54	16 22.8	E.	57.74	57.74		0.38
				0.39						0.33	
14 21.7	Sk.	48.94	49.17		0.36	21 2.8	F.	59.40	59.45		0.36
				0.34						0.39	
15 19.3	E.	49.48	49.48		0.37	24 18.3	E.	60.48	60.48		0.44
				0.40						0.49	
16 20.7	F.	49.74	49.80		0.42	25 20.4	F.	60.96	61.01		0.34
										0.20	
16 1.0	E.	49.98	49.98		0.42	26 16.0	Sk.	61.14	61.37		0.19
				0.43						0.18	
17 21.6	S.	50.23	50.25		0.37	27 1.2	F.	61.38	61.44		0.16
				0.31						0.14	
18 20.3	Sk.	— 50.30	— 50.54		— 0.29	28 1.6	E.	— 61.58	— 61.58		— 0.24
				— 0.27						— 0.35	

TABLE D.—*Adopted Corrections and Rates of the Kessels Sidereal Clock, etc.*—Continued.

Mean Day and Sidereal Hour.	Observer.	Clock Correction from Mean of Observations.	Clock Correction Corrected for Personal Equation.	Apparent Daily Rate between Groups.	Adopted Daily Rate.	Mean Day and Sidereal Hour.	Observer.	Clock Correction from Mean of Observations.	Clock Correction Corrected for Personal Equation.	Apparent Daily Rate between Groups.	Adopted Daily Rate.
1874. d. h.		s.	s.	s.	s.	1874. d. h.		s.	s.	s.	s.
Nov. 29 14.4	S.	— 62.10	— 62.12		— 0.35	Dec. 14 4.1	E.	— 67.09	— 67.09		— 0.26
				— 0.35						— 0.17	
Dec. 1 1.4	Sk.	62.40	62.63		0.38	14 11.4	S.	67.12	67.14		0.21
				0.42						0.25	
2 1.6	E.	63.05	63.05		0.25	15 0.0	F.	67.22	67.27		0.32
				0.08						0.38	
2 16.3	F.	63.04	63.10		0.12	17 11.5	S.	68.20	68.22		0.30
				0.15						0.21	
4 19.5	S.	63.28	63.30		0.12	18 21.9	E.	68.31	68.31		0.30
										0.39	
4 2.6	F.	63.25	63.31		0.12	19 20.7	F.	68.62	68.68		0.32
										0.26	
4 11.4	S.	63.30	63.32		0.12	21 22.3	Sk.	68.99	69.22		0.29
				0.10						0.32	
5 0.3	Sk.	63.17	63.40		0.20	22 4.2	E.	69.62	69.62		0.39
				0.31						0.46	
7 23.4	F.	63.94	64.00		0.38	23 20.0	F.	69 90	69.96		0.33
				0.44						0.20	
8 2.1	S.	64.47	64.49		0.48	24 11.0	S.	70.24	70.26		0.19
				0.53						0.18	
9 3.9	Sk.	64.83	65.06		0.48	25 11.1	Sk.	70.21	70.44		0.13
										0.08	
9 10.0	S.	65.20	65.43			29 16.9	E.	70.80	70.80		0.04
				0.44						— 0.01	
11 22.8	F.	— 65.79	— 65.85		— 0.40	31 12.3	F.	— 70.77	— 70.82		— 0.01
				— 0.35							

TABLE E.—*Observations of the Nadir Point, together with the Resulting Zenith-Point Corrections used in reducing the Observations with the Transit Circle in* 1874.

Mean day and Sidereal Hour.	Observer.	Readings of Microscope Micrometers. V.	VI.	VII.	VIII.	Concluded Circle Reading.	Telescope Micrometer.	Nadir Reading.	Zenith-Point Correction.
1874. d. h.		r. "	"	"	"	° ' "	r.	° ' "	° ' "
Jan. 9.3 3.0	F.	10 2.4	28.4	28.1	28.6	179 55 59.38	35.217	179 58 46.15	0 1 12.37
10.1 21.9	S.	18.9	18.8	17.2	19.0	56 18.46	33.787	43.32	15.20
10.3 3.0	S.	4.1	0.7	0.6	1.6	1.76	35.099	46.71	11.81
11.8 14.1	Sk.	16.8	12.2	11.5	12.6	13.28	34.234	44.98	13.54
12.0 19.8	E.	10.2	5.8	6.8	6.8	7.39	34.658	45.59	12.93
12.3 3.4	E.	10 7.0	2.2	3.7	3.4	179 56 4.08	34.785	179 58 44.23	0 1 14.29
15.4 5.3	Sk.	13.6	7.2	8.3	10.5	9.90	34.262	42.04	16.48
16.4 5.8	E.	7.6	1.5	2.6	3.6	3.81	34.562	40.54	17.98
17.0 20.2	Sk.	3.2	0.0	0.2	0.4	0.99	34.822	41.71	16.81
17.4 5.4	Sk.	11.5	4.8	5.8	8.2	7.56	34.349	41.03	17.49
20.0 20.4	E.	10 6.6	0.3	2.0	4.6	179 56 3.36	34.789	179 58 43.57	0 1 14.95
24.4 5.9	E.	15.0	11.0	11.4	11.2	12.14	34.252	44.12	14.40
26.1 23.0	S.	9.6	6.9	6.4	8.4	7.82	34.402	42.10	16.42
28.5 6.9	E.	15.3	10.8	10.9	11.8	12.20	34.235	43.92	14.60
29.0 21.0	F.	9 27.3	24.4	25.2	28.2	55 56.28	35.230	43.23	15.29
29.5 7.2	F.	10 7.1	1.4	0.3	2.8	179 56 2.90	34.796	179 58 43.22	0 1 15.30
31.5 8.3	Sk.	20.3	14.0	13.6	15.0	15.72	33.945	43.01	15.51
Feb. 4.0 21.8	Sk.	8.4	4.2	3.0	3.5	4.78	34.569	41.62	16.90
4.5 10.0	F.	1.4	24.6	25.8	27.9	55 57.42	34.956	40.19	18.33
10.0 21.9	E.	5.8	29.5	0.0	1.7	56 1.74	34.655	40.89	18.63
10.4 6.9	E.	9 28.5	22.2	22.8	23.7	179 55 54.28	35.216	179 58 41.03	0 1 17.49
11.5 8.7	S.	10 14.4	9.6	8.6	12.2	56 11.19	34.158	41.74	16.78
12.0 22.7	F.	8.6	2.6	1.7	6.8	4.92	34.615	42.46	16.06
12.3 6.4	F.	9 19.4	12.8	12.9	15.9	55 45.25	35.822	41.27	17.25
16.0 22.5	Sk.	10 16.6	15.5	12.0	12.1	56 14.05	34.228	45.66	12.86
16.5 10.1	Sk.	10 16.5	13.6	10.9	12.1	179 56 13.25	34.264	179 58 45.42	0 1 13.10
17.0 22.4	E.	15.8	11.9	11.3	12.1	12.76	34.258	44.84	13.68
17.4 7.0	E.	10.2	5.5	5.5	6.0	6.83	34.588	43.95	14.57
18.4 8.2	F.	9.8	3.6	3.7	5.7	5.70	34.595	42.93	15.59
26.1 0.3	F.	8.4	7.1	6.2	10.6	8.07	34.474	43.45	15.07
26.4 8.0	F.	9 29.7	27.0	28.0	28.7	179 55 58.35	35.082	179 58 43.04	0 1 15.48
27.5 11.1	S.	10 13.5	13.6	11.5	13.3	56 12.96	34.164	43.60	14.92
28.5 10.8	Sk.	8.6	6.2	5.8	6.4	6.75	34.528	42.96	15.56
Mar. 1.4 8.5	E.	4.2	3.2	2.6	3.6	3.40	34.754	43.07	15.45
2.0 23.7	F.	9.7	5.6	5.3	9.3	7.48	34.538	43.85	14.67
2.4 9.0	F.	10 1.0	29.6	28.2	1.0	179 55 59.95	34.995	179 58 43.32	0 1 15.20
4.0 23.6	Sk.	17.2	19.5	15.2	14.0	56 16.50	34.128	46.59	11.93
4.7 14.0	Sk.	11.7	10.8	8.6	7.5	9.65	34.417	44.16	14.36
7.7 15.0	S.	11.8	11.7	9.1	11.4	11.00	34.268	43.23	15.29
9.4 8.4	E.	10 9.3	8.6	7.0	7.2	179 56 8.02	34.370	179 58 41.81	0 1 16.71

TABLE E —*Observations of the Nadir Point, etc.*—Continued.

Mean Day and Sidereal Hour.		Observer.	Readings of Microscope Micrometers. V.	VI.	VII.	VIII.	Concluded Circle Reading.	Telescope Micrometer.	Nadir Reading.	Zenith-Point Correction.
1874. d.	h.		r. "	"	"	"	° ' "	r.	° ' "	° ' "
Mar. 10.4	8.5	F.	10 2.7	29.5	28.7	0.7	179 56 0.40	34.975	179 58 43.46	0 1 15.06
10.8	17.7	S.	14.0	11.8	13.8	15.2	13.71	34.116	43.61	14.91
11.1	1.0	S.	10.6	6.5	10.6	10.1	9.44	34.440	44.30	14.22
11.4	9.7	S.	10.2	9.6	7.2	9.7	9.18	34.412	43.61	14.91
12.3	7.9	E.	6.1	4.6	3.6	4.2	4.63	34.689	43.31	15.21
14.0	0.4	Sk.	10 9.5	7.8	6.2	5.9	179 56 7.35	34.515	179 58 43.37	0 1 15.15
14.3	8.2	Sk.	7.2	4.0	3.4	5.2	4.94	34.652	43.05	15.47
19.4	8.9	E.	12.2	12.8	8.9	9.2	10.75	34.400	44.98	13.54
20.5	12.7	Sk.	15.7	14.4	10.4	11.4	13.00	34.218	44.46	14.06
21.4	8.9	E.	11.6	11.8	8.4	9.2	10.21	34.414	44.67	13.85
24.5	12.0	Sk.	10 10.2	7.0	4.2	3.2	179 56 6.15	34.490	179 58 41.78	0 1 16.74
25.4	9.2	E.	7.8	6.8	3.5	3.0	5.28	34.583	42.34	16.18
26.4	9.2	F.	4.5	2.2	27.0	29.2	0.75	34.930	43.12	15.40
28.0	0.9	Sk.	13.9	14.0	7.1	5.7	10.19	34.316	43.16	15.36
28.5	12.3	Sk.	19.3	17.1	11.6	11.0	14.75	34.003	42.92	15.60
29.3	8.9	E.	10 11.8	9.7	5.2	5.4	179 56 8.01	34.444	179 58 42.93	0 1 15.59
30.0	0.9	F.	2.6	0.2	25.0	27.2	55 58.75	35.080	43.41	15.11
30.5	12.5	F.	1.8	29.9	24.8	26.5	58.25	35.079	42.88	15.64
Apr. 3.4	10.5	F.	9 29.1	26.6	21.6	24.0	55.32	35.296	43.29	15.23
4.5	12.0	S.	10 15.1	12.8	7.0	8.0	56 10.71	34.217	42.15	16.37
10.8	20.4	E.	10 9.7	7.8	2.0	3.4	179 56 5.71	34.442	179 58 40.60	0 1 17.92
11.1	3.5	F.	1.8	3.0	26.3	28.6	55 59.92	35.215	46.64	11.88
13.0	2.0	Sk.	9.5	8.5	1.5	1.4	56 5.22	34.534	41.53	16.99
13.3	9.0	Sk.	12.5	9.0	3.3	4.0	7.20	34.422	41.78	16.74
21.1	. .	Sk.	15.4	16.3	6.8	5.7	11.05	34.176	41.88	16.64
21.4	12.4	Sk.	10 18.5	16.9	8.5	7.0	179 56 12.71	34.082	179 58 42.09	0 1 16.43
22.4	10.9	E.	15.6	14.8	7.4	6.6	11.11	34.218	42.57	15.95
26.4	10.9	E.	14.8	13.5	6.0	5.8	10.00	34.214	41.40	17.12
27.1	4.0	F.	3.0	1.8	22.7	27.0	55 58.62	35.036	42.62	15.90
29.5	14.0	Sk.	11.6	8.2	1.8	2.2	56 5.98	34.450	41.00	17.52
30.0	2.7	E.	10 15.2	13.8	7.0	7.6	179 56 10.89	34.130	179 58 41.01	0 1 17.51
May 3.4	10.9	E.	20.8	18.8	11.4	12.2	15.82	33.850	41.65	16.87
5.8	20.8	F.	6.9	3.7	23.9	28.0	0.62	34.842	41.64	16.88
7.0	3.3	Sk.	13.6	12.9	3.6	3.6	8.42	34.362	42.09	16.43
7.4	12.4	Sk.	17.6	14.4	6.0	6.2	11.02	34.144	41.36	17.16
8.4	12.3	E.	20.6	19.3	9.8	10.7	15.10	34.018	43.50	15.02
8.8	21.0	E.	10 19.2	18.9	9.6	10.0	179 56 14.42	34.000	179 58 42.54	0 1 15.98
9.5	13.7	F.	7.2	6.5	25.5	28.8	2.00	35.006	45.54	12.98
11.0	2.6	Sk.	14.8	14.8	3.4	2.4	8.82	34.602	46.16	12.36
11.6	17.0	Sk.	15.5	11.9	2.6	4.0	8.50	34.442	43.39	15.13
13.4	14.0	F.	6.4	2.9	22.3	26.2	55 59.45	35.068	43.92	14.60
18.5	14.5	S.	10 9.4	8.5	29.0	26.0	179 56 3.24	34.788	179 58 43.44	0 1 15.08

TABLE E.—*Observations of the Nadir Point, etc.*—Continued.

Mean Day and Sidereal Hour.	Observer.	Readings of Microscope Micrometers. V.	VI.	VII.	VIII.	Concluded Circle Reading.	Telescope Micrometer.	Nadir Reading.	Zenith-Point Correction.
1874. d. h.		r. "	"	"	"	° ' "	r.	° ' "	° ' "
May 19.0 4.3	Sk.	10 14.7	13.7	2.4	2.7	179 56 8.38	34.380	179 58 42.33	0 1 16.19
19.5 16.0	Sk.	17.9	13.4	3.7	5.8	10.20	34.264	42.37	16.15
21.3 12.5	F.	4.6	1.9	20.1	23.5	55 57.52	35.108	42.61	15.91
22.5 15.1	S.	15.8	13.5	0.5	3.4	56 8.28	34.422	42.86	15.66
26.4 15.0	S.	18.2	15.8	2.2	5.6	10.44	34.350	43.93	14.59
27.0 4.9	Sk.	10 20.8	20.6	8.7	8,6	179 56 14.68	34.018	179 58 43.08	0 1 15.44
27.5 16.7	Sk.	24.8	20.2	10.4	12.7	17.04	33.908	43.76	14.76
28.0 4.7	E.	23.6	23.5	11.2	15.0	18.31	33.916	45.15	13.37
28.4 13.8	E.	25.3	24.1	8.6	11.5	17.36	34.021	45.80	12.72
29.5 17.0	F.	17.7	14.6	27.8	1.7	7.92	34.695	46.69	11.83
30.5 16.0	S.	10 26.0	25.7	8.6	10.8	179 56 17.78	33.917	179 58 45.56	0 1 12.96
June 1.1 6.0	E.	25.0	25.7	10.1	11.2	18.01	34.028	46.56	11.96
1.5 16.7	E.	25.6	25.2	8.2	9.2	17.09	34.064	46.20	12.32
2.1 7.2	F.	17.6	17.6	0.9	4.6	10.18	34.446	45.13	13.39
4.4 14.0	Sk.	14.3	11.0	24.3	27.6	4.30	34.762	44.10	14.42
9.0 5.8	E.	10 20.2	23.2	4.9	3.9	179 56 13.05	34.634	179 58 50.88	0 1 7.64
9.4 14.0	E.	26.0	27.6	7.6	7.9	17.26	34.379	51.18	7.34
9.9 1.5	E.	19.2	24.1	2.2	2.8	12.06	34.730	51.37	7.15
13.0 5.8	E.	10.4	12.4	23.2	24.2	2.55	35.286	50.36	8.16
13.4 14.7	E.	18.4	17.3	29.6	0.8	9.05	34.528	45.26	13.26
15.1 8.5	S.	10 9.5	11.3	21.3	25.0	179 56 1.76	35.100	179 58 46.73	0 1 11.79
15.1 8.5	S.	9.4	11.4	21.2	24.5	1.62	35.086	46.37	12.15
15.3 14.3	S.	1.2	0.4	10.8	13.6	55 51.51	35.753	46.48	12.04
17.5 17.0	E.	14.0	13.2	23.3	25.0	56 3.86	34.987	47.10	11.42
18.1 8.3	F.	3.0	4.0	14.6	16.6	55 54.60	35.774	49.89	8.63
18.5 17.3	F.	10 9.4	7.8	17.6	19.6	179 55 58.60	35.444	179 58 48.84	0 1 9.68
19.1 8.0	S.	8.0	9.6	18.4	23.0	59.72	35.308	47.87	10.65
19.5 16.7	S.	15.7	14.0	24.0	27.0	56 5.18	34.974	48.23	10.29
20.3 14.3	Sk.	17.3	14.5	22.7	26.3	5.20	34.890	46.95	11.57
21.3 12.5	E.	20.5	18.4	28.8	1.8	9.84	34.595	47.07	11.45
22.1 8.0	F.	10 11.3	11.9	22.1	25.6	179 56 2.72	35.153	179 58 48.50	0 1 10.02
22.5 17.3	F.	25.7	23.4	1.6	4.4	13.78	34.400	48.02	10.50
23.0 6.5	E.	22.0	22.4	2.5	4.0	12.72	34.522	48.84	9.68
24.5 18.7	Sk.	23.0	20.3	0.6	1.3	11.30	34.686	49.93	8.59
25.0 6.7	E.	23.0	26.5	3.0	4.5	14.25	34.578	51.23	7.29
28.6 20.0	F.	19.2	16.1	27.1	28.7	7.78	34.786	47.95	10.57
29.0 6.4	E.	10 25.9	28.7	7.1	8.1	179 56 17.45	34.260	179 58 49.56	0 1 8.96
29.5 17.6	E.	27.6	27.4	6.4	7.2	17.18	34.242	49.01	9.51
July 5.5 19.1	E.	24.1	21.1	2.0	3.2	12.59	34.486	48.48	10.04
6.0 7.5	Sk.	18.3	16.5	25.0	25.5	~ 6.32	34.936	48.78	9.74
6.5 19.2	Sk.	20.0	16.2	24.8	28.2	7.30	34.821	48.00	10.52
6.7 0.4	Sk.	10 19.6	14.6	24.0	26.7	179 56 6.22	34.860	179 58 47.51	0 1 11.01

TABLE E.—*Observations of the Nadir Point, etc.*—Continued.

Mean Day and Sidereal Hour.		Observer.	Readings of Microscope Micrometers. V.	VI.	VII.	VIII.	Concluded Circle Reading.	Telescope Micrometer.	Nadir Reading.	Zenith-Point Correction.
1874. d.	h.		r. "	"	"	"	° ′ ″	r.	° ′ ″	° ′ ″
July 7.0	7.5	E.	10 24.6	24.0	3.7	5.2	179 56 14.38	34.451	179 58 49.41	0 1 9.11
7.4	17.5	E.	27.7	25.8	4.8	6.0	.16.08	34.250	48.05	10.47
8.6	20.6	Sk.	24.0	21.6	29.2	1.5	11.58	34.608	49.01	9.51
8.8	1.9	Sk.	24.7	25.4	2.2	3.9	14.05	34.422	48.63	9.89
10.0	6.5	Sk.	26.3	26.2	4.0	5.0	15.38	34.338	48.69	9.83
13.0	7.9	S.	10 14.6	15.3	11.8	14.8	179 56 14.11	33.708	179 58 37.77	0 1 20.75
13.5	19.5	S.	11.4	9.2	5.0	7.8	8.35	34.108	38.13	20.39
15.0	8.0	E.	12.8	14.0	10.9	11.2	12.21	33.860	38.19	20.33
15.4	17.4	E.	14.4	11.2	7.6	9.4	10.68	34.002	38.83	19.69
17.5	20.1	S.	19.6	16.6	11.8	15.3	15.84	33.660	38.76	′ 19.76
18.3	15.2	E.	10 9.7	7.2	2.8	5.9	179 56 6.39	34.241	179 58 38.21	0 1 20.31
19.2	13.0	E.	6.9	8.9	5.2	6.7	6.92	34.298	39.61	18.91
23.0	8.4	E.	11.9	10.4	7.2	8.3	9.45	34.148	39.85	18.67
23.4	17.6	E.	18.0	14.8	10.8	13.4	14.26	33 718	38.08	20.44
25.1	10.7	S.	15.4	16.0	11.0	14.4	14.18	33.812	39.42	19.10
30.0	8.8	E.	10 7.8	8.5	3.5	4.9	179 56 6.18	34.344	179 58 39.42	0 1 19.10
30.4	19.0	E.	13.2	11.4	7.0	7.0	9.68	34.120	39.65	18.87
Aug. 3.3	17.4	S.	20.0	17.0	11.6	13.5	15.51	33.761	39.98	18.54
4.4	17.8	E.	11.6	9.4	5.4	6.8	8.29	34.246	40.18	18.34
4.8	3.4	E.	7.8	5.0	3.4	3.6	4.92	34.335	38.18	20.34
6.1	10.7	S.	10 14.0	14.6	6.8	9.7	179 56 11.29	34.010	179 58 39.57	0 1 18.95
15.0	10.2	Sk.	11.1	11.1	5.7	6.0	8.48	34.280	40.89	17.63
15.4	19.9	Sk.	15.0	10.4	6.3	7.0	9.68	34.209	41.00	17.52
19.0	9.2	Sk.	8.0	10.6	4.0	1.8	6.10	34.424	40.71	17.81
19.5	20.9	Sk.	14.6	11.0	4.2	6.2	8.99	34.292	41.59	16.93
26.1	11.9	Sk.	10 5.4	5.1	29.8	1.0	179 56 2.82	34.430	179 58 37.53	0 1 20.99
27.5	21.5	Sk.	5.0	1.4	25.4	29.3	0.28	34.447	35.25	23.27
31.7	5.2	Sk.	8.2	5.1	29.0	0.8	3.28	34.494	38.97	19.55
Sept. 9.4	22.0	F.	3.6	29.8	24.7	27.8	55 58.98	34.777	39.01	19.51
18.0	11.5	F.	0.0	29.6	22.6	27.4	57.40	35.081	42.07	16.45
18.4	21.8	F.	10 5.9	2.4	25.3	28.6	179 56 0.56	34.924	179 58 42.84	0 1 15.68
21.0	12.2	E.	7.8	7.0	0.6	3.0	4.60	34.607	42.01	16.51
21.3	20.2	E.	17.6	13.4	7.2	7.8	11.48	34.199	42.65	15.87
22.0	13.0	F.	2.0	27.2	21.2	28.6	55 57.28	35.120	42.56	15.96
22.4	22.5	F.	6.8	2.6	25.2	0.7	56 1.32	34.782	41.43	17.09
23.5	23.4	S.	11 2.0	29.1	21.4	25.5	27.02	33.073	40.96	17.56
24.0	12.6	Sk.	10 8.1	6.2	28.5	28.5	179 56 2.82	34.690	179 58 41.51	0 1 17.01
24.5	0.3	Sk.	10.8	6.0	0.0	3.6	5.08	34.608	42.51	16.01
25.0	12.6	E.	13.0	12.8	7.4	8.6	10.42	34.266	42.62	15.90
25.4	22.2	E.	14.5	11.7	3.9	5.5	8.90	34.363	42.58	15.94
26.0	13.0	F.	9 27.8	0.2	23.0	24.8	55 56.45	35.236	43.50	15.02
26.4	22.3	F.	10 6.7	1.9	23.2	9.0	179 56 0.20	34.933	179 58 42.61	0 1 15.91

TABLE E.—*Observations of the Nadir Point, etc.*—Continued.

Mean Day and Sidereal Hour.	Observer.	Readings of Microscope Micrometers. V.	VI.	VII.	VIII.	Concluded Circle Reading.	Telescope Micrometer.	Nadir Reading.	Zenith-Point Correction.
1874. d. h.		r. "	"	"	"	° ' "	r.	° ' "	° ' "
Sept. 30.7 6.5	F.	9 29.1	23.5	14.0	20.3	179 55 51.72	35.076	179 58 36.32	0 1 22.20
Oct. 1.0 11.9	S.	10 12.4	10.2	1.9	6.0	56 7.62	34.178	38.48	20.04
1.8 8.1	S.	17.8	12.4	5.4	9.5	11.26	33.876	37.49	21.03
2.0 12.2	Sk.	0.0	29.2	23.8	25.1	55 57.04	34.820	37.72	20.80
2.4 22.3	Sk.	10.0	5.1	29.3	2.7	56 4.28	34.460	39.45	19.07
2.8 7.9	Sk.	10 15.8	9.3	2.8	4.9	179 56 8.20	34.127	179 58 38.28	0 1 20.24
3.0 13.0	E.	11.3	8.4	4.4	4.4	7.12	34.324	40.21	18.31
3.3 19.6	E.	16.2	10.4	5.3	7.9	9.95	34.089	39.47	19.05
5.1 14.4	S.	18.2	15.6	9.2	13.8	14.21	33.715	37.98	20.54
5.4 22.4	S.	19.4	14.5	7.6	11.1	13.15	33.799	38.20	20.32
10.3 21.2	Sk.	10 12.6	7.0	27.2	0.7	179 56 4.38	34.357	179 58 37.98	0 1 20.54
12 5 1.0	F.	9 24.4	18.2	12.4	16.7	55 47.92	35.257	35.29	23.23
13.3 22.3	S.	10 20.9	14.3	8.4	13.3	56 14.22	33.534	35.20	23.32
14.4 23.0	Sk.	12.2	5.4	0.8	4.5	5.72	34.003	33.89	24.63
15.0 13.7	E.	19.4	14.5	10.6	14.2	14.69	33.476	34.80	23.72
15.4 22.9	E.	10 18.4	12.8	10.5	12.3	179 56 13.51	33.530	179 58 34.43	0 1 24.09
16.4 23.0	F.	7.2	1.7	28.5	29.5	1.72	34.365	35.44	23.08
18.3 21.9	Sk.	3.6	27.2	24.7	29.8	55 58.84	34.568	35.66	22.86
19.0 13.9	E.	16.0	12.7	8.7	12.7	56 12.51	33.708	37.17	21.35
19.3 22.4	E.	19.2	13.8	8.2	10.8	13.00	33.609	35.14	23.38
20.1 15.4	F.	9 28.6	25.5	20.4	26.9	179 55 55.35	34.887	179 58 37.06	0 1 21.46
20.4 23.4	F.	10 4.2	29.9	23.4	24.1	57.89	34.510	33.83	24.68
22.4 23.4	Sk.	21.6	16.2	6.2	6.8	56 12.70	33.668	35.75	22.76
23.0 14.2	E.	17.1	14.2	9.9	13.6	13.70	33.719	37.53	20.99
23.5 1.6	E.	8.0	5.8	10.3	16.2	10.08	33.238	26.54	31.98
25.5 1.0	E.	10 9.3	6.8	11.4	17.6	179 56 11.28	33.182	179 58 26.88	0 1 31.64
26.0 14.5	Sk.	9 25.9	25.6	0.6	2.4	55 58.62	33.958	26.02	32.50
26.5 2.9	Sk.	10 12.7	7.6	11.2	18.2	56 12.44	33.148	27.52	31.00
27.1 16.7	E.	1.5	0.6	9.5	14.8	6.60	33.450	26.31	32.21
28.3 21.0	F.	4.0	1.1	4.9	13.1	5.78	33.614	27.99	30.53
28.7 8.0	F.	10 1.2	26.8	0.5	9.4	179 56 1.98	33.827	179 58 27.45	0 1 31.07
29.5 2.4	E.	7.7	4.2	8.3	17.0	9.30	33.426	28.64	29.88
31.6 4.6	E.	3.5	29.5	5.2	10.8	4.75	33.416	23.93	34.59
Nov. 3.3 23.6	Sk.	7.8	2.6	7.9	14.0	8.06	33.294	25.38	33.14
4.1 16.0	E.	9 29.5	28.4	5.3	8.8	3.00	33.686	26.32	32.20
4.4 . .	E.	10 5.4	2.1	9.4	14.2	7.75	33.348	25.89	32.62
6.1 17.6	S.	9 20.4	14.9	0.3	10.4	179 55 56.51	33.828	179 58 23.00	0 1 35.52
6.3 22.7	S.	10 0.6	28.0	4.3	10.7	56 3.39	33.748	27.67	30.85
7.0 14.5	Sk.	9 29.4	27.3	4.1	9.0	2.44	33.666	25.46	33.06
7.5 2.2	Sk.	10 16.4	23.0	7.4	15.4	0.55	35.287	48.38	10.14
11.0 15.8	Sk.	6.0	24.3	6.4	10.6	55 56.84	35.530	48.39	10.13
12.0 15.7	E.	10 12.3	27.9	12.1	22.3	179 56 3.65	35.096	179 58 48.56	0 1 9.96

TABLE E.—*Observations of the Nadir Point, etc.*—Continued.

Mean Day and Sidereal Hour.	Observer.	Readings of Microscope Micrometers. V.	VI.	VII.	VIII.	Concluded Circle Reading.	Telescope Micrometer.	Nadir Reading.	Zenith-Point Correction.
1874. d. h.		r. "	"	"	"	° ' "	r.	° ' "	° ' "
Nov. 12.4 1.0	E.	10 24.0	8.7	2.7	6.5	179 56 10.48	34.273	179 58 42.79	0 1 15.73
13.0 16.5	F.	11.4	28.2	20.9	27.5	55 59.50	34.976	42.58	15.94
13.6 5.4	F.	14.2	27.0	20.0	26.6	59.45	34.877	41.00	17.52
14.1 17.9	S.	8.6	25.5	20.8	25.6	57.64	35.119	42.90	15.62
14.3 23.5	S.	12.5	27.6	21.3	26.8	59.55	34.953	42.27	16.25
16.3 0.6	E.	10 21.8	9.1	2.8	4.7	179 56 9.59	34.299	179 58 42.30	0 1 16.22
21.5 3.5	F.	9.6	22.0	14.2	19.6	55 53.85	35.199	40.34	18.18
24.1 18.5	E.	26.2	16.0	6.5	8.9	56 14.40	34.085	43.83	14.69
25.0 16.5	F.	9.7	25.1	18.1	23.2	55 56.52	35.182	42.75	15.77
25.5 5.0	F.	13.8	27.9	21.1	24.3	59.28	34.958	42.08	16.44
27.0 15.4	Sk.	10 16.6	6.7	27.7	29.6	179 56 5.14	34.644	179 58 43.12	0 1 15.40
27.5 4.0	F.	17.2	4.2	25.6	28.6	3.90	34.784	44.03	14.49
28.3 1.6	E.	21.0	9.7	1.1	3.6	8.85	34.336	42.13	16.39
Dec. 1.4 2.4	Sk.	15.3	29.2	.17.3	26.2	55 59.50	34.845	40.56	17.96
2.4 2.2	E.	25.5	11.2	3.8	5.2	56 11.42	34.146	41.79	16.73
4.2 20.5	S.	10 25.2	15.8	8.0	10.2	179 56 14.80	34.073	179 58 44.04	0 1 14.48
4.4 3.5	F.	14.1	27.0	20.3	25.0	55 59.10	34.887	40.81	17.71
4.8 13.6	S.	11 7.4	23.7	16.0	21.0	56 24.51	33.265	41.39	17.13
5.0 16.2	Sk.	10 16.1	2.4	25.7	28.1	3.09	34.664	41.38	17.14
5.4 3.2	Sk.	18.2	2.0	25.0	29.3	3.61	34.691	42 32	16.20
7.2 20.3	F.	10 21.0	6.6	29.5	2.8	179 56 7.48	34.464	179 58 42.71	0 1 15.81
8.5 4.4	S.	27.4	12.2	5.6	8.9	13.52	33.956	40.98	17.54
9.4 3.3	Sk.	19.4	3.6	25.2	29.2	4.35	34.610	41.81	16.71
9.8 11.6	S.	28.7	13.6	6.9	10.1	14.82	33.862	40.84	17.68
11.1 20.2	F.	8.2	26.6	19.0	24.6	55 57.10	35.069	41.59	16.93
11.7 9.6	F.	10 9.4	23.3	15.1	18.7	179 55 54.12	35.288	179 58 41.97	0 1 16.55
14.8 12.7	S.	21.7	7.2	28.2	3.2	56 7.58	34.231	39.24	19.28
15.1 19.6	F.	10.1	25.5	16.4	22.5	55 56.12	35.039	40.15	18.37
15.7 10.0	F.	15.4	28.3	20.0	24.7	59.60	34.780	39.68	18.84
18.0 18.1	E.	21.6	7.9	29.4	2.8	56 7.92	34.326	41.04	17.48
18.4 3.9	E.	10 23.6	10.4	0.4	2.8	179 56 9.30	34.088	179 58 38.79	0 1 19.73
19.1 19.6	F.	8.8	24.7	17.2	23.9	55 56.15	35.232	43.13	15.39
19.4 4.2	F.	15.1	1.8	21.0	26.3	56 1.05	34.789	41.26	17.26
21.0 17.4	Sk.	14.8	3.2	22.2	23.6	0.95	34.811	41.50	17.02
21.3 2.2	Sk.	18.7	3.2	21.3	25.7	2.22	34.739	41.66	16.86
22.5 5.0	E.	27.4	16.0	5.5	6.7	13.90	33.864	39.95	18.57
23.0 18.7	F.	10 8.2	24.8	15.2	20.3	179 55 54.62	35.083	179 58 39.32	0 1 19.20
23.6 8.2	F.	17.8	1.7	20.4	25.2	56 1.28	34.853	42.46	16.06
24.7 11.4	S.	26.5	12.8	2.8	6.4	12.14	34.049	41.02	17.50
25.7 12.1	Sk.	23.6	7.9	25.6	29.5	6.65	34.460	41.82	16.70
30.0 19.0	E.	26.0	15.5	5.3	6.0	13.20	34.098	42.83	15.69
31.8 13.6	F.	10 17.9	3.5	22.9	26.5	179 56 2.70	34.598	179 58 39.98	0 1 18.54

THE MURAL CIRCLE.

During the year 1874, the Mural Circle was employed in observing stars whose right ascensions had been previously determined by the Transit Instrument, a number of stars above and below the pole from the British Association Catalogue, and a few observations of the moon.

MICROMETER AND TRANSIT THREADS.

The diaphragm inserted in February, 1871, was in use during the year. The intervals of the threads were as follows:

Threads.	I.	II.	III.	IV.	1.	2.	V.	4.	5.	VI.	VII.	VIII.	IX.
Intervals.	" + 53.3	" + 40.9	" + 29.0	" + 16.0	" +3.2	" +1.6	" 0.0	" −1.7	" −3.3	" − 16.1	" − 28.5	" − 40.5	" − 52.7

The values of the micrometer-screw were determined from the following observations; the readings being for intervals of five minutes of arc:

1874.	r.	r.	r.
April 6,	21.117	30.695	40.271
April 6,	21.136	30.697	40.270

which gives the value of the revolution 31″.341, which was used during the year.

NADIR-POINT.

For determinations of the nadir-point, a cap is provided which fits loosely over any of the eye-pieces of the telescope. Just above the eye-lens, the cap has a plate of thin glass, inclined at an angle of 45°. This arrangement has the advantage of enabling the observer to collimate without removing the eye-piece used in observation, and thereby avoids the risk of injury to the threads, and prevents the frequent admission of dust by air-currents, etc.

The mode of observation is as follows: The circle-telescope is so pointed that, when the nadir-divisions of the former are accurately under the zeros of the microscopes, the images of the horizontal threads in the field of the latter may be seen at a small distance from the threads themselves. The micrometer-reading for the true nadir being that which corresponds to the coincidence of each thread seen directly, with the image of the other seen by reflection, the images were alternately made to measure, on each side of the threads, spaces equal to their distance apart.

As the nadir thus determined always depends upon the same set of divisions of the circle, and is made with the same part of the micrometer-screw, it is uniformly affected with the errors of those divisions and by any inaccuracy peculiar to that portion of the screw.

METHOD OF OBSERVING.

The method of observing was the same as in previous years, and consisted essentially in transferring the subdivisions of the circle from the microscopes to the micrometer eye-piece. The circle was set so that the divisions nearest to the reading for the given declination were as accurately as possible under the zero of the microscopes.

The circle-microscopes were read either before or after the observation. The observations were made by bisecting the objects with the southern horizontal thread, and occasionally the northern limb of the moon with the northern thread, and the observations of the nadir-point were reduced to the southern or northern wire from the observations of the night.

EXPLANATION OF THE PRINTED OBSERVATIONS.

Columns 1 to 3 and 7 to 12 need no explanation beyond that given in former years. The magnitudes in column 4 are those estimated by the observer at the time of observation.

Columns 5 and 6 show the number of micrometer-readings, generally three for each star, and the transit-threads over which the readings were made. When the number of micrometer-readings does not correspond to the number of threads included between the limits given in column 6, it is understood that the observations were made at equal intervals between those limits.

Column 13 contains the mean of six microscope-readings.

Column 14 contains the mean of the observed micrometer-readings.

Column 15 contains the adopted "nadir-correction", expressed in micrometer-revolutions. It is formed by subtracting the excess of the micrometer-reading above 30 revolutions from the excess of the mean circle-reading above 200°, the reading of microscope A when the telescope pointed to the nadir; that excess being first expressed in micrometer-revolutions.

Column 16 gives the corrected meridian micrometer-reading formed by applying the following corrections to column 14:

1. The nadir-correction.

2. The reduction to the meridian. For observations made on any of the vertical wires, the reduction is given by the formula

$$\Delta m = -\frac{\sin^2 \frac{1}{2} h}{2\, r \sin 1''} \tan \delta$$

h being the equatorial interval in arc of the vertical wire, and r the value of one revolution of the micrometer. Expressing h in seconds of time, and putting r for its value already given, this expression becomes

$$\Delta m = -\{5.2405\}\, h^2 \tan \delta$$

the value of which, for different wires, is tabulated on pages xxxii and xxxiii of the Introduction to the Washington Observations for 1863.

For stars near the pole, the time having been recorded, this expression becomes

$$\Delta m = -\frac{225 \sin 1''}{4r}(t-\alpha)^2 \sin 2\delta$$

t being the true sidereal time of observation, and α the right ascension of the star.

3. The correction of unsymmetrical observations of the moon, on account of motion in declination. This was computed by the formula

$$\Delta m = \{4.9467\}\, h \sec \delta' \Delta\delta \left(1 + \frac{\Delta\alpha}{3610}\right)$$

$\Delta\alpha$ = change of R. A. in 1 hour of mean time.
$\Delta\delta$ = change of δ in 1 hour of mean time.
h = sidereal equatorial interval of wire.
δ' = declination of limb.

4. The correction of unsymmetrical observations for inclination of micrometer-threads to the horizon. This was:

Jan. 8 to Feb. 16,	- - - - - - - - - - - -	$i = +0.00008 \times h$
Feb. 18 to April 4,	- - - - - - - - - - - -	$i = 0.00000$
April 21 to June 4,	- - - - - - - - - - - -	$i = +0.00004 \times h$
June 6 to July 7,	- - - - - - - - - - - -	$i = +0.00002 \times h$
July 8 to July 18,	- - - - - - - - - - - -	$i = +0.00011 \times h$
Aug. 26 to Sept. 27,	- - - - - - - - - - - -	$i = +0.00006 \times h$
Oct. 1 to Oct. 20,	- - - - - - - - - - - -	$i = +0.00002 \times h$
Oct. 21 to Nov. 13,	- - - - - - - - - - - -	$i = +0.00004 \times h$
Nov. 14 to Dec. 31,	- - - - - - - - - - - -	$i = 0.00000$

i denoting the correction for inclination and h the equatorial interval in seconds of time, used with its proper algebraic sign, for any thread.

Columns 18, 19, and 20 contain the reading of the Newman barometer, its attached thermometer, and the external thermometer.

The external thermometer is designated No. 3 in the Appendix to the Washington Observations for 1845, page 54; it is placed outside of the north aperture, several inches beyond the wall, and is read by the help of a sextant-telescope attached to the window-frame.

Column 21, entitled "Instrumental corrections", contains the micrometer-equivalent, or the difference between the corrected micrometer-reading and 30 revolutions, converted into arc. If the former quantity is denoted by m, the values of this column will be given by the formula

$$\text{Corr.} = (30 \text{ rev.} - m)\, r$$

Column 22 contains the apparent zenith-distance, equal to the sum of columns 13 and 21, diminished by 20° if the sum be greater than 20°, or subtracted from 20° if less. In the former case, the result is marked S., as south; in the latter N., as north.

Column 23 contains the correction for refraction corresponding to the apparent zenith-distance and the barometer and thermometer readings. This quantity is computed from Bessel's tables, as given in an expanded form in the Appendix to the Washington Observations for 1845. This correction, added to the apparent zenith-distance, gives the corrected geocentric zenith-distance, which is not printed.

The following corrections are applied to the thermometer-readings for irregularity in the bore of the tube.

1. The correction of the thermometer.

Correction of Thermometer.

Ther. scale.	Corr.	Δ log ref.	Ther. scale.	Corr.	Δ log ref.
°	°		°	°	
30	− 0.04	+0.00004	66	+ 0.20	−0.00016
32	− .06	+ 5	68	+ .25	− 21
34	− .11	+ 10	70	+ .22	− 18
36	− .08	+ 7	72	+ .12	− 10
38	− .05	+ 4	74	+ .03	− 3
40	− .02	+ 2	76	− .01	+ 1
42	− .01	+ 1	78	− .04	+ 3
44	.00	0	80	− .04	+ 3
46	− .01	+ 1	82	− .01	+ 1
48	− .03	+ 3	84	.00	0
50	− .04	+ 3	86	− .06	+ 5
52	− .03	+ 3	88	− .12	+ 10
54	− .01	+ 1	90	− .14	+ 11
56	− .01	+ 1	92	− .14	+ 11
58	− .03	+ 3	94	− .14	+ 11
60	.00	0	96	− .13	+ 11
62	+ .05	− 4	98	− .12	+ 10
64	+ 0.12	−0.00010	100	− 0.12	+0.00010

2. The correction for parallax for observation of the moon, computed by the formula

$$\sin p' = \sin \pi \sin (z' - 11' \ 14''.54) \ \{9.9994302\}$$

or

$$p' = \pi \ (z' - 11' \ 14''.54) \ \{9.9994302\} \frac{\sin \pi \ \text{arc} \ p'}{\text{arc} \ \pi \ \sin p'}$$

and

$$p = p' \mp \tfrac{1}{2} \ (p \mp s) \sin p \sin s$$

the upper sign corresponding to observations of the upper limb, and *vice versa*. The quantities

$$\frac{\sin \pi}{\text{arc} \ \pi} \quad \text{and} \quad \frac{\text{arc} \ p'}{\sin p'},$$

are given in Tables IX and X, and the correction of p' in the last formula is given in Table XI of the Appendix to the Washington Observations for 1845.

In the formulas,

z' represents the observed zenith-distance, corrected for refraction;

π, the equatorial horizontal parallax, as given in the American Ephemeris;

s, the semi-diameter of the object; and

p, the required correction for parallax.

3. In cases when only one limb of an object is observed, the correction for semi-diameter is included under this head. This correction is in all cases taken from the American Ephemeris.

4. A reduction on account of defective illumination of the moon.

Let α' and δ' represent the moon's right ascension and declination; A and D, the sun's right ascension and declination; S, the semi-diameter of the moon; then we have

$$\tan \varepsilon = \tan \delta' \cos (\alpha' - A)$$

$$\sin \chi = \frac{\sin (D - \varepsilon) \cos \delta'}{\cos \varepsilon}$$

and

$$\Delta S = S \text{ ver sin } \chi$$

A negative value of sin χ will indicate that a correction is to be applied to the north limb.

Column 24 contains the declination of the star, using the assumed north latitude $+38^\circ\ 53'\ 38''.8$.

Column 25 contains the reduction from the apparent declination at date to the mean declination for 1874.0.

It was computed by Bessel's formulas, with the constants of the American Ephemeris and Nautical Almanac; and, in addition to the terms included in that work, it includes also those depending on twice the moon's longitude.

Corrections for proper motions have not been applied to any star.

The resulting mean places of the stars are collected in pages 325 to 343 inclusive.

The declinations of the moon are given on page 397.

Column 26 contains the initials of the observer's name: Y., Professor M. Yarnall.

The observations were reduced by Professors Yarnall and Lockwood.

THE TWENTY-SIX-INCH EQUATORIAL.

This instrument was constructed by the firm of Alvan Clark & Sons, and is fully described in Appendix I, Washington Astronomical Observations for 1874.

The instrument is mounted on the German plan. The focal length of the objective is about 15 times its diameter, or more nearly 390 inches.

THE POSITION-CIRCLE.

The position-circle screws into the first sliding tube, and remains permanently attached to the telescope, whether the micrometer, spectroscope, or a plain eye-piece is used. The micrometers, the plain eye-pieces, etc., fit into a slipping tube beyond the position-circle, and are fixed in position by a clamp-screw. The position-circle is about 8 inches in diameter, and has two graduations: the first (coarse graduation) is on its outer face, and is to single degrees. This is read by an "index" or pointer. The second (fine graduation) is to two-tenths of one degree, and is read by two verniers (marked I and II) to one one-hundredth of one degree. Reading-glasses are fitted to these verniers. The index is about 90° in angular position from each vernier. A clamp and tangent-screw are fixed to a collar which can be clamped so as to bring the clamp to any position on the limb. When once clamped, it cannot be moved without altering the reading for the parallel or zero of position. The reading of the position-circle increases as the angle of position measured diminishes. The zero of position is changed by removing the micrometer, or adjusting the wires for focus, and it was frequently altered during 1875.

THE MICROMETER.

The micrometer has already been briefly described in the introduction to the observations with the XXVI-inch Equatorial (Washington Astronomical Observations, 1873). It was specially designed for the determination of the angles of position and the distances of the faint satellites of *Neptune* and *Uranus* from their primaries. To this end only four wires were placed in the reticle (so that as little light as possible might be in the field of view), three of these being fixed and one movable. The illumination of the wires is by a lamp through the end of the micrometer-box, and hence the long wire, which is parallel to the direction of the micrometer-screw and to that of the beam of light from the illuminating-lamp, is not seen under ordinary cir-

cumstances. There are two fixed wires perpendicular to this longitudinal wire, and therefore parallel to the movable micrometer-wire, which are usually designated in the observations as wire A and wire B. Wire A is at 64 revolutions and wire B at 93 revolutions, the whole range of the screw being 125 revolutions, and one revolution being about 10″. The whole set of short wires, including the micrometer-wire, is moved simultaneously by a fine screw on the outside of the box, which we may call screw A, while the micrometer-wire only is moved by the steel micrometer-screw M.

To measure an angle of position, the telescope being carried by the driving-clock, the micrometer-box is turned by the hand (the verniers of the position-circle turning with it) until wire A is parallel to the line joining the centers of the planet and the satellite. The micrometer-wire may now be placed parallel to and five or six seconds from wire A, and the two objects placed midway between the wires, or the measure may be made by moving the micrometer-wire so that this bisects both planet and satellite. A reading of the position-circle, usually to tenths of degrees only, gives the result of this one measure. Occasionally, in the observations of *Titan* and *Japetus*, angles of position were measured with the long wire.

The zero of position was determined, with the telescope unclamped, by causing a star in the immediate neighborhood of the objects measured to run accurately along the short wires.

To measure a distance, the telescope being driven by the driving-clock, the micrometer-box is moved so that the vernier of the position-circle may read 90° more or less than the reading previously obtained for the position-angle, and clamped. The planet and satellite are then brought by the slow motion in right ascension near to wire A and to the movable wire. Screw A, on the outside of the box, is then moved so that wire A bisects the planet's disk, and, the clock-work motion maintaining it nearly in that position, the movable wire is brought to coincide with the satellite by moving screw M. This process may be termed preliminary. The screw A is now moved so that the movable wire is *accurately* on the satellite, and after the eye is perfectly satisfied with the bisection it is quickly turned to the planet. If its disk is satisfactorily bisected, the eye is again turned to the satellite, and so for several trials. Each object is examined *separately* and without any thought of the other; in practice, the satellite is first examined, as it is harder to see, and then the position on the planet's disk is verified. If all is satisfactory, the whole revolutions are read from a scale on the side of the box and the fractions from the micrometer-head. If, however, the bisections of both planet and satellite are not satisfactory, the movable wire is altered in position by the screw M, and the whole process repeated until a good measure is obtained. If now the reading for the coincidence of the micrometer-wire and wire A were obtained, and successive bisections of the satellite with the micrometer-wire were made, any error peculiar to the bisecting of the satellite with the *movable wire* would remain. In practice, however, the micrometer-wire is moved to the other side of wire A, and set at the proper distance approximately. Wire A is now brought by the motion of screw A accurately upon the *satellite*, and the movable wire is brought to bisect the planet's disk. The whole process of repeated trial and rectification is now gone through with until a satisfactory bisection is attained, and the reading of the scale and micrometer-head now obtained, joined with that first read, gives a measure of *double* distance. It will be

observed that in both positions of the micrometer-wire relative to wire A, the eye is occupied with but one question at a time, and has simply to decide whether a single object is accurately bisected by a certain wire, or not. It is not required that the eye should decide this while the hand is employed in altering the distance, but, the wires *remaining* at a given distance apart, the eye has simply to decide whether the given distance is the one required, and the final process is identically the same for both positions of the micrometer-wire. It is conceived that in this way the likelihood of constant errors is lessened. It should be noted that the final movement of the screw M is always made so that this screw acts against the springs of the micrometer.

VALUE OF ONE REVOLUTION OF THE MICROMETER-SCREW.

The value of one revolution of the screw of the micrometer has been carefully determined, from 804 transits of equatorial and zenith stars observed with an achromatic eye-piece on eleven different nights, to be

$$9''.9480 \pm 0''.0015$$

The separate results are exhibited in the following table:

Date.	Observer.	Eye-piece.	Number of Single Transits.	One revolution equal to—	Weight.	Temperature.
1874.				"		
Dec. 4	Newcomb .	600 A	27	9.950	1	. . .
4	Newcomb .	600 A	27	.929	1	. .
1875.						
Jan. 4	Holden . .	600 A	55	.964	1	33° F.
14 and 22	Holden . .	600 A	131	.937	1	30° and 47°
26	Holden . .	600 A	96	.954	2	24°
Feb. 1	Holden . .	600 A	128	.953	2	30°
4	Holden . .	600 A	57	.933	1	22°
5	Holden . .	600 A	109	.948	2	24°.5
May 11	Holden . .	600 A	62	.957	2	64°
17	Holden . .	600 A	88	.943	4	55°
1876.						
Mar. 3	Holden . .	400	24	9.949	3	33°.5
			Σ 804	Mean 9.9470		

In the observations as published, the distances are given in revolutions of the screw, except for the measures of double stars, which are reduced with the value above.

All the observations of the satellites of *Neptune* and *Uranus* made in 1874 by Professor NEWCOMB, have been discussed in *Washington Astronomical Observations for* 1873, Appendix I, using a different value of the screw-revolution for reasons there explained.

IRREGULARITIES OF THE SCREW.

With a view of determining whether the value of one revolution of the screw was uniform throughout its length, the micrometer was placed under the microscope of a

measuring-engine, and the scale of the engine was read for successive coincidences of the wires of the microscope-micrometer with the movable wire of the telescope-micrometer; the latter being set at every entire revolution from 55^r to 77^r.

Telescope Micrometer.	Scale.	Δ	Telescope Micrometer.	Scale.	Δ
r.		"	r.		"
55.00	166.208	− 0.04	67.00	154.884	0.00
56.00	165.268	0.00	68.00	153.937	− 0.03
57.00	164.321	− 0.03	69.00	152.997	+ 0.01
58.00	163.376	− 0.04	70.00	152.054	+ 0.02
59.00	162.432	− 0.04	71.00	151.112	+ 0.04
60.00	161.493	+ 0.01	72.00	150.173	+ 0.09
61.00	160.556	+ 0.08	73.00	149.223	+ 0.03
62.00	159.609	+ 0.05	74.00	148.279	+ 0.03
63.00	158.663	+ 0.03	75.00	147.332	0.00
64.00	157.719	+ 0.03	76.00	146.387	− 0.01
65.00	156.776	+ 0.04	77.00	145.442	− 0.02
66.00	155.832	+ 0.04			

The column Δ gives the errors in seconds of arc, which, being divided by 10, would have to be subtracted from the micrometer-readings in the first column, in order that they should be perfectly accordant with the scale-readings in the second column; the scale value of one micrometer revolution being supposed 0.944. It is not certain whether these outstanding errors are in the micrometer or in the readings of the scale, as they are of the same order of magnitude with the probable errors of the latter; but the probability that they are in the micrometer did not seem great enough to require a repetition of the determination.

To find whether there were any periodic irregularities in the screw, the length of every quarter revolution, from 62^r to 66^r, was measured by the microscope-micrometer of the measuring-engine. The smallest measure was $1^r.537$, and the largest $1^r.584$. The difference of these measures in arc of the great telescope is $0''.08$. It is probably a purely accidental error of reading. The mean periodic inequality indicated by the measures was less than $0''.01$, and has therefore been regarded as insensible.

MODE OF OBSERVING.

The micrometer was usually set so that the longitudinal wire should be nearly parallel to the line joining the planet and satellite, and therefore the micrometer-wires at right angles to this line. This setting can generally be made by the eye within two or three degrees, and therefore so near that no correction for obliquity of wires is necessary. If, in any case, the observer was uncertain respecting the exact direction of the wires, the reading of the position-circle was recorded, in order that the obliquity might be determined by comparison with the readings for position-angle. The measures of distance were then made by causing one of the micrometer-wires to bisect the planet and the other the satellite, in the manner already described. The difference of the two readings, multiplied, if necessary, by the secant of the obliquity of

the wires, is double the distance of the satellite from the planet. When circumstances permitted, five such double measures were taken, and the mean time of the first and last recorded to the nearest minute. The micrometer was then turned 90°, and the angle of position measured by the same wires used in measuring distance. Generally, the wires were placed at a distance of three or four seconds, and the measure made by bringing the satellite between them. If the satellite was near greatest elongation, the measures were also made by simultaneously bisecting planet and satellite with a single wire. After five such measures, the times of the first and last only being recorded, the micrometer was turned 90° and the measures of distance were repeated.

The zero of the position-circle was determined by setting one of the cross-wires so that an object near the equator should follow it in its diurnal motion. The readings of the position-circle for this position of the micrometer are given in the marginal notes The angle of position is then determined by the formula

$$P = \text{Parallel} - (C \pm 90°)$$

P being the angle of position and C the mean reading of the position-circle for parallelism of the wires to the line joining the planet and satellite.

EYE-PIECES.

There are four negative eye-pieces, of the AIRY pattern, which fit into the slipping tube of the telescope when the micrometer is removed. Their magnifying powers and fields of view are as below.

Negative Eye-pieces.

Designation.	Magnifying power.	Field of view.	Makers.
	Diameters.	′	
A_I	155*	25.2	Clark & Sons.
A_{II}	439*	10.5	Do.
A_{III}	863*	3.5	Do.
A_{IIII}	1360*	2.5	Do.

* Approximate,

The micrometer eye-pieces are as below:—

Positive Eye-pieces.

Designation.	Magnifying power.	Field of view.	Makers.	Remarks.
	Diameters.	′		
1	173	13.2	Clark & Sons .	
2	284	8.1	Kahler . . .	
3	392	9.9	Clark & Sons .	
3 A	400*	6.6	Kahler . . .	Achromatic.
4	636	3.5	Clark & Sons .	
5 A	606	4.2	Kahler . . .	Achromatic.
6 A	888	2.3	Steinheil . .	Do.
7 C	761	3.2	Kahler . . .	Crown-glass.
8 F	875	3.2	Kahler . . .	Flint-glass.
9	1103	2.6	Kahler . . .	
10	1282	2.1	Kahler . . .	
11	1802	1.6	Kahler . . .	
I	390	4.9	Kahler . . .	Single lens.
II	585	3.2	Kahler . . .	Do.
III	780	2.6	Kahler . . .	Do.
IV	1560	1.8	Kahler . . .	Do.

*Approximate.

THE PRINTED OBSERVATIONS.

The observations in detail are printed from pages 245 to 284. These pages contain a transcript from the observing-books, except that the *mean* of the times is corrected for error of chronometer. In the last part of the year, a full set of eye-pieces was obtained, and the designations of these eye-pieces in the observing-books have been changed so as to agree with those in the preceding list. In the early part of the year eye-pieces 3 and 4 were chiefly used; later, numbers 5 A and 6 A.

Pages 285 to 293 include the Results of Observations. The distances are corrected for the inclination of wires. In the column "Observer", N. designates Professor NEWCOMB and Hn. Professor HOLDEN. Besides the printed observations, a series, as yet unpublished, was made by Professor HOLDEN on a few nebulæ, particularly on the Nebula of Orion.

OBSERVATIONS

WITH THE

TRANSIT CIRCLE.

1874.

SUMMARY OF THE PRINCIPAL CONSTANTS USED IN REDUCING OBSERVATIONS MADE WITH THE TRANSIT CIRCLE DURING THE YEAR 1874.

Approximate equatorial interval between any two consecutive wires from I to VII	12¼ˢ
One revolution of the microscope micrometers	30″
One revolution of the zenith distance micrometer	15″.312

Corrections for Inclination and Distances of the Declination Wires.

Vertical Wire.	Inclination of Central Wires.	Correction for Wire A.	Correction for Wire B.
	″	′ ″	′ ″
I	— 0.43	— 2 33.40	+ 2 33.39
II	0.29	33.30	33.40
III	— 0.14	33.20	33.40
IV	0.00	33.10	33.41
V	+ 0.14	33.01	33.42
VI	0.29	32.91	33.42
VII	+ 0.43	— 2 32.81	+ 2 33.43

Constant { Added to reduction to meridian / Subtracted from zenith point correction }	1″.80
Adopted latitude of the instrument	+ 38° 53′ 38″.80
One division of the hanging level	0ˢ.058
Position of the instrument	Clamp west.

Circle B, on the east end of the axis, was this year used in observing; the reading of its horizontal microscope being 44° 0′ when the telescope was pointed to the zenith.

In reversing the instrument, the notation of the transit wires is also reversed, so that the wire first reached by an equatorial star is always called wire I.

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Jan. 8	1	δ Ursæ Minoris. .	F.	. .	. .	23.0	59.0	33.5	7.0	44.0	. .	. .	12 33.30	. .	. .	. .	. . .	. .
9	2	γ Aquilæ. . . .	F.	55.7	58.4	59.9	6.0	8.2	10.2	16.5	18.0	20.6	40 8.17	. .	. .	. .	. . .	. .
	3	α Aquilæ. . . .	F.	17.6	20.1	21.7	27.8	30.0	32.0	38.2	39.7	42.3	44 29.93	. .	. .	. .	. . .	. .
	4	β Aquilæ. . . .	F.	46.8	49.5	50.9	57.1	59.2	1.2	7.5	9.0	11.4	48 59.18	. .	. .	. .	. . .	. .
	5	Polaris. . . .	F.	. .	. .	13.5	41.0	6.5	34.0	59.5	. .	. .	12 6.90	+ 3.80	. .	+ 5.50	1 12 16.20	— 1.99
	6	α Arietis	F.	43.7	46.6	48.1	54.8	57.0	59.0	5.9	7.5	10.4	59 57.00	+ 1.42	+ 5.55	+ 5.51	2 0 3.93	— 0.03
	7	ξ^1 Ceti.	F.	0.0	2.4	3.9	10.1	12.1	14.2	20.5	22.0	24.6	6 12.20	+ 1.40	+ 5.47	+ 5.51	2 6 19.11	+ 0.08
	8	γ Geminorum . .	Ha.	7.0	9.6	11.0	17.4	19.6	21.7	28.2	29.6	32.4	30 19.61	+ 1.40	+ 5.72	+ 5.69	6 30 26.70	— 0.06
	9	α Canis Majoris .	Ha.	16.5	19.0	20.8	27.2	29.4	31.5	37.8	39.6	42.3	39 29.34	+ 1.38	+ 5.72	+ 5.69	6 39 36.41	— 0 09
	10	51 Cephei	Ha.	. .	. .	. .	. .	0.8	42.8	25.4	. .	. .	41 0.60	+ 2.00	. .	+ 5.69	6 41 8.29	+ 0.31
	11	δ Geminorum . .	Ha.	16.3	19.0	20.7	25.0	. .	. .	. .	. .	. .	12 29.50	+ 1 40	+ 5.75	+ 5.69	7 12 36.59	— 0.12
	12	α^2 Geminorum . .	Ha.	12.8	15.8	17.7	. .	. .	. .	36.9	38.8	41.9	26 27.32	+ 1.41	+ 5.71	+ 5.69	7 26 34.42	+ 0.22
	13	α Canis Minoris .	Ha.	23.6	26.3	27.9	33.9	36.0	38.0	44.2	45.6	48.4	32 35.99	+ 1.39	+ 5.67	+ 5.69	7 32 43.07	— 0.14
	14	β Geminorum . .	Ha.	16.2	19.0	21.0	27.8	30.2	32.5	39.5	41.2	44.0	37 30.16	+ 1.40	+ 5.59	+ 5.69	7 37 37.25	+ 0.07
	15	α^1 Herculis . . .	S.	32.9	35.6	37.0	43.4	45.5	57.7	54.0	55.6	58.2	8 45.54	+ 1.34	+ 5.64	+ 5.62	17 8 52.50	— 0.02
	16	α Ophiuchi . . .	S.	43.9	46.6	48.0	54.2	56.6	58.6	4.8	6.5	9.0	28 56.47	+ 1.33	+ 5.65	+ 5.62	17 29 3.42	0.00
10	17	Sun I, S. . . .	S.	38.0	40.9	42.4	49.1	51.4	53.6	59.9	1.6	4.6	26 51.28	+ 1.22	. .	+ 5.62	19 26 58.12	. .
	18	Sun II, N. . . .	S.	58.8	1.7	3.4	9.9	12.0	14.3	21.0	22.6	25.6	29 12.14	+ 1.22	. .	+ 5.62	19 29 18.98	. .
	19	Polaris. . . .	S.	. .	. .	. .	. .	6.0	30.0	59.0	. .	. .	12 5.53	+ 9.00	. .	+ 5.60	1 12 20.19	+ 2.88
	20	o Piscium . . .	S.	24.6	27.4	28.9	35.0	37.1	39.1	45.4	46.9	49.5	38 37.10	+ 1.32	+ 5.62	+ 5.60	1 38 44.02	— 0.05
	21	α Draconis, S. P. .	S.	. .	. .	1.7	57.0	52.2	47.0	42.3	. .	. .	0 52.04	+ 0.88	. .	+ 5.60	14 0 58.52	— 0.13
	22	5 Ursæ Minoris, S. P.	S.	. .	. .	0.2	51.1	42.6	34.0	25.0	. .	. .	27 42.58	+ 0.60	. .	+ 5.60	14 27 48.78	+ 0.09
	23	γ Ceti.	S.	27.3	29.8	31.3	37.4	39.4	41.5	47.6	49.2	51.8	36 39.48	+ 1.30	+ 5.51	+ 5.60	2 36 46.38	+ 0.09
	24	α Orionis. . . .	Ha	2.4	4.9	6.5	12.7	14.7	16.8	22.9	24.5	27.0	48 14.71	+ 1.25	+ 5.75	+ 5.77	5 48 21.73	— 0.01
	25	22 Camelopardalis .	Ha.	. .	. .	40.8	46 6	52.4	58.2	4.0	. .	. .	4 52.40	+ 1.81	. .	+ 5.78	6 4 59.99	+ 0.18
	26	δ Ursæ Minoris, S. P.	Ha.	. .	44.7	11.6	. .	. .	. .	19.4	53.4	. .	12 36.85	— 2.49	. .	+ 5.78	18 12 40.14	+ 0.25
	27	μ Geminorum . .	Ha.	. .	. .	. .	. .	. .	. .	22.9	24.5	27.3	15 14.05	+ 1.31	+ 5.67	+ 5.78	6 15 21.14	+ 0.07
	28	γ Geminorum . .	Ha.	6.9	9.7	11.3	17.6	19.7	21.8	28.3	29.9	32.5	30 19.74	+ 1.20	+ 5.71	+ 5.78	6 30 26.81	+ 0.04
	29	α Canis Majoris. .	Ha	16.9	19.5	21.2	27.4	29.7	31.7	38.0	39.7	42.3	39 29.60	+ 1.16	+ 5.68	+ 5.79	6 39 36.55	+ 0.03
	30	ϵ Canis Majoris. .	Ha.	20.6	23.6	25.3	32.1	34.5	36.7	43.4	45.6	48.5	53 34.53	+ 1.13	+ 5.87	+ 5.79	6 53 41.45	— 0.13
	31	δ Canis Majoris. .	Ha	56.3	59.4	1.0	7.8	10.2	12.4	19.3	21.0	23.7	3 10.12	+ 1.12	+ 5.87	+ 5.79	7 3 17.03	— 0.13
	32	δ Geminorum . .	Ha.	16.3	19.2	20.8	27.5	29.7	31.8	38.4	40.0	42.8	12 29.61	+ 1.14	+ 5.91	+ 5.79	7 12 36.54	— 0.18
	33	Polaris, S. P. . .	S.	. .	. .	. .	45.5	20.0	54.0	30.0	. .	. .	12 20.62	— 8.12	. .	+ 5.58	1 12 18.08	+ 1.19
	34	Moon II . . .	S.	25.6	28.0	29.7	36.0	38.3	40.0	46.6	48.2	50.9	47 38.21	+ 1.30	. .	+ 5.58	13 47 45.09	—62.49
	35	50 Cassiopeæ, S. P. .	S.	. .	. .	48.7	42.1	35.5	29.0	22.4	29.0	22.4	52 35.54	+ 0.10	. .	+ 5.58	1 52 41.24	0.00
	36	α Draconis . . .	S.	. .	. .	41.4	46.0	51.1	55.8	0.5	. .	. .	0 50.96	+ 1.77	. .	+ 5.58	14 0 58.31	— 0.37
	37	α Bootis	S.	37.0	38.7	42.8	45.1	47.2	49.3	51.7	56.0	57.1	9 47.21	+ 1.40	+ 5.59	+ 5.58	14 9 54.19	— 0.01
11	38	α Columbæ . . .	Ha.	44.5	47.9	49.6	57.0	59.4	1.7	9.2	11.1	14.2	34 59.40	+ 0.70	+ 6.24	+ 6.16	5 35 6.26	— 0.12
	39	α Orionis. . . .	Ha.	2.3	4.9	6.3	12.6	14.5	16.6	22.8	24.4	27.0	48 14.60	+ 0.95	+ 6.16	+ 6.16	5 48 21.71	— 0.03
	40	δ Ursæ Minoris, S. P.	Ha.	. .	. .	. .	. .	3.3	29.0	22.4	56.1	12.5	12 39.10	— 5.17	. .	+ 6.16	18 12 40.09	+ 0.13
	41	μ Geminorum . .	Ha.	0.6	2.3	5.0	11.6	13.8	16.0	22.7	24.3	27.0	15 13.81	+ 1.05	+ 6.18	+ 6.16	6 15 21.02	— 0.06
	42	γ Geminorum . .	Ha	6.9	9.6	11.0	17.4	19.5	21.6	28.0	29.7	32.4	30 19.57	+ 1.01	+ 6.17	+ 6.17	6 30 26.75	— 0.03
	43	α Canis Majoris .	Ha.	16.7	19.4	21.0	27.5	29.6	31.6	37.9	39.5	42.3	39 29.50	+ 0.82	+ 6.12	+ 6.17	6 39 36.49	— 0.03
	44	δ Geminorum . .	Ha.	16.3	19.0	20.7	27.4	29.6	31.8	38.2	39.9	42.7	12 29.51	+ 1.05	+ 6.11	+ 6.17	7 12 36.73	0.00
	45	θ Virginis . . .	Sk.	5.9	8.5	10.0	16.1	18.1	20.2	26.4	27.9	30.6	3 18.19	+ 1.12	+ 5.87	+ 5.93	13 3 25.24	+ 0.02
	46	Polaris, S. P. . .	Sk.	. .	. .	18.5	50.5	26.0	0.0	32.5	. .	. .	12 25.50	—14.70	. .	+ 5.93	1 12 16.73	+ 0.07
	47	ζ Virginis . . .	Sk.	56.6	59.0	0.5	6.7	8.7	10.8	16.9	18.5	21.0	28 8.74	+ 1.14	+ 5.90	+ 5.93	13 28 15.81	— 0.06
	48	Moon II . . .	Sk.	58.6	1.2	2.8	9.3	11.5	13.6	50.2	51.7	54.3	34 11.47	+ 1.05	. .	+ 5.93	14 34 18.45	—64.46
	49	ϵ Bootis	Sk.	7.2	10.0	11.8	18.8	20.9	23.4	30.2	31.9	34.9	39 21.01	+ 1.33	+ 5.94	+ 5.93	14 39 28.27	— 0.03
	50	β Bootis	Sk.	. .	. .	1.3	3.8	6.5	9.2	14.6	16.6	20.0	57 3.82	+ 1.45	. .	+ 5.93	14 57 11.20	+ 0.05

19, 46. Telescope micrometer reading increased 1 revolution in reduction.
21, 22, 35, 36. Bisections at sets B and D.
33. Circle-reading changed 2′ in reduction.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1																	
2																	
3																	
4																	
5																	
6	343 54	10 16.7	13.2	13.0	16.0	31	. .	. .	. .	582	590	72.4	16 1 20.6	. .	+ 16.8	67 7 58.6	+ 0.6
7	329 18	13.9	9.8	10.8	12.7	33	. .	520	. .	514	. .	72.4	30 37 46.7	40.0	+ 34.7	81 44 42.6	− 0.4
8																	
9																	
10																	
11																	
12																	
13																	
14																	
15																	
16																	
17	298 54	5.7	3.2	3.5	8.1	38	. .	858	. .	. .	. .	75.2	61 3 5.0	48.2	+ 1 44.1	112 11 10.3	
18	299 26	9.5	8.2	9.6	13.0	36	. .	. .	. .	386	330	75.2	60 30 31.6	. .	+ 1 41.9	111 38 34.7	
19	49 40	9.8	5.0	6.7	8.7	38	. .	. .	666	668	647	71.8	310 17 16.1	38.5	− 1 9.6	1 22 27.7	+ 1.3
20	329 34	15.0	12.1	12.3	16.6	33	. .	135	. .	109	. .	71.8	30 21 42.4	. .	+ 34.6	81 28 38.2	0.0
21	76 0	9 25.7	22.0	19.2	23.9	35	. .	588	. .	522	. .	71.8	283 55 58.2	37.0	− 3 54.4	334 58 25.0	+ 3.4
22	64 46	10 5.0	29.4	0.2	3.4	37	. .	900	. .	950	. .	71.8	295 10 43.7	35.2	− 2 5.8	346 14 59.1	− 0.9
23	323 46	3.6	0.2	0.3	5.1	37	. .	798	. .	766	. .	71.8	36 10 42.0	36.3	+ 43.4	87 17 46.6	− 0.7
24																	
25																	
26																	
27																	
28																	
29																	
30																	
31																	
32																	
33	52 24	9 26.0	22.2	22.5	24.0	33	680	683	710	670	660	71.8	307 33 30.4	28.0	− 1 18.7	358 38 32.9	− 0.7
34	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .		28.0			
35	69 12	27.0	22.0	22.0	24.7	40	. .	180	. .	142	. .	71.8	290 45 9.9	. .	− 2 38.8	341 48 52.3	− 1.0
36	26 0	25.5	21.3	21.3	23.4	34	. .	662	. .	590	. .	71.8	333 55 44.3	. .	− 29.7	25 1 35.8	− 2.7
37	340 54	10 5.0	1.9	1.2	5.3	39	. .	. .	. .	182	. .	71.8	19 3 4.8	. .	+ 20.9	70 9 46.9	− 0.2
38																	
39																	
40																	
41																	
42																	
43																	
44																	
45	316 12	12.7	7.8	8.5	11.9	36	. .	722	. .	699	. .	73.5	43 44 35.0	. .	+ 58.7	94 51 54.9	− 0.8
46	52 24	12.0	6.9	7.0	7.1	39	. .	384	400	405	. .	73.5	307 33 29.6	. .	− 1 19.8	358 38 31.0	− 2.6
47	321 6	17.6	12.5	12.5	17.1	33	. .	736	. .	691	. .	73.5	38 49 54.0	28.2	+ 49.5	89 57 4.7	+ 0.1
48																	
49	348 40	4.5	2.2	28.5	1.0	39	. .	928	. .	911	. .	73.5	11 17 15.8	. .	+ 12.3	62 23 49.3	+ 0.3
50	1 56	8.6	3.5	4.0	6.0	37	. .	142	. .	082	. .	73.5	358 0 36.9	26.2	− 2.2	49 6 55.9	− 1.6

No.	Barom.	At. Ther.
	in.	°
17	29.60	45.0
18	29.65	47.3
19	29.68	45.0
20	29.70	42.0
21	29.82	33.0
22	30.24	31.2
23	30.28	30.6

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
17	− 7.8	− 16 17.8	. .	− 16 25.6
18	− 7.8	+ 16 17.8	. .	+ 16 10.0

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Jan. 11	1	η Herculis . . .	E.	. .	. .	. .	. .	. .	. .	36.3	38.3	41.7	38 25.80	+ 1.39	+ 5.89	+ 5.84	16 38 33.03	— 0.04
	2	κ Ophiuchi . . .	E.	21.4	24.0	25.5	31.8	33.9	36.0	42.1	43.8	46.4	51 33.88	+ 1.14	+ 5.72	+ 5.84	16 51 40.86	+ 0.16
	3	ϵ Ursæ Minoris. .	E.	. .	. .	10.9	26.1	41.9	56.5	2.0	. .	. .	58 39.48	+ 4.04	. .	+ 5.84	16 58 49.36	— 1.75
	4	α^1 Herculis . . .	E.	. .	. .	. .	. .	47.8	49.9	54.0	55.7	58.3	8 45.65	+ 1.17	+ 5.74	+ 5.84	17 8 52.66	+ 0.12
	5	α Ophiuchi . . .	E.	44.0	46.6	48.2	54.5	56.5	58.6	4.9	6.6	9.1	28 56.56	+ 1.16	+ 5.77	+ 5.83	17 29 3.55	+ 0.09
	6	μ Herculis . . .	E.	9.0	11.9	13.6	20.6	22.9	25.1	32.0	33.9	36.8	41 22.87	+ 1.28	+ 5.75	+ 5.83	17 41 29.98	+ 0.08
	7	δ Ursæ Minoris. .	E.	43.0	8.0	18.0	51.0	25.0	59.0	34.0	44.0	10.0	12 25.78	+ 7.87	. .	+ 5.83	18 12 39.48	— 0.52
	8	α Lyræ	E.	15.4	18.8	20.8	28.5	31.1	33.8	41.7	43.6	46.9	32 31.18	+ 1.38	+ 5.73	+ 5.83	18 32 38.39	+ 0.12
12	9	Sun I, N. . . .	E.	18.4	21.3	23.0	29.3	31.6	33.8	40.4	42.0	44.8	35 31.62	+ 0.92	. .	+ 5.83	19 35 38.37	. .
	10	Sun II, S. . . .	E.	39.1	41.7	43.3	50.0	52.1	54.2	0.8	2.5	5.4	37 52.12	+ 0.92	. .	+ 5.83	19 37 58.87	. .
	11	Polaris. . . .	E.	. .	. .	. .	. .	. .	. .	. .	41.5	27.5	11 51.00	+15.84	. .	+ 5 80	1 12 12.64	— 0.01
	12	η Piscium . . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. . .	. . .	. .
	13	β Arietis	E.	20.4	23.0	24.7	31.2	33.4	35.6	42.2	43.9	46.6	47 33.44	+ 1.13	+ 5.84	+ 5.79	1 47 40.36	— 0.03
	14	I, 5	E.	. .	. .	14.9	17.1	19.5	21.6	24.0	. .	. .	49 19.42	+ 0.85	. .	+ 5.79	1 49 26.06	+ 0.12
	15	I, 9^1	E.	47.0	49.9	51.5	. .	. .	. .	9.1	11.0	13.7	53 0.20	+ 0.87	. .	+ 5.79	1 53 6.86	+ 0.12
	16	I, 9^2	E.	. .	. .	56.4	58.7	0.9	3.0	5.4	. .	. .	53 0.88	+ 0.87	. .	+ 5.79	1 53 7.54	+ 0.12
	17	α Arietis	E.	43.6	46.3	48.0	54.7	56.8	59.0	5.8	7.5	10.2	59 56.88	+ 1.14	+ 5.92	+ 5.78	2 0 3.80	— 0.13
	18	B. A. C. 960 . .	E.	33.9	1.4	17.3	20.5	42.0	3.0	5.8	21.8	48.0	2 41.52	+ 4 64	. .	+ 5.78	3 2 51.94	— 0.56
	19	ζ Arietis	E.	19.5	22.3	23.9	30.4	32.6	34.7	41.4	43.1	45.7	7 32.62	+ 1.13	+ 5.85	+ 5.78	3 7 39.53	— 0.11
	20	δ Persei	E.	32.5	36.4	38.5	47.6	50.6	53.6	2.6	4.8	8.6	33 50.58	+ 1.37	. .	+ 5.78	3 33 57.73	+ 0.13
	21	η Tauri	E.	39.5	42.4	44.0	50.7	52.9	55.1	1.8	3.6	6.3	39 52.92	+ 1.15	+ 5.84	+ 5.78	3 39 59.85	— 0.06
	22	III, 5	E.	43.4	46.2	47.8	54.4	56.6	58.8	5.5	7.2	9.9	42 56.64	+ 0.89	. .	+ 5.77	3 43 3.30	— 0.47
	23	β Ursæ Minoris. .	E.	. .	. .	. .	. .	. .	11.8	27.0	33.0	42.6	50 56.28	+ 2.27	. .	+ 5.77	14 51 4.32	— 0.73
	24	β Bootis	E.	47.8	51.3	53.2	1.0	3.9	6.6	14.8	16.7	20.0	57 3.92	+ 1.29	. .	+ 5.77	14 57 10.98	— 0.20
	25	β Libræ	E.	53.4	56.0	57.6	3.5	5.7	7.7	13.8	15.5	18.0	10 5.69	+ 0.96	+ 5.87	+ 5.77	15 10 12.42	— 0.10
14	26	ι Cassiopeæ . . .	S.	. .	. .	23.5	28.4	34.0	39.0	44.3	. .	. .	18 33.84	+ 2.31	. .	+ 5.75	2 18 41.90	+ 0.32
	27	5 Ursæ Minoris, S.P.	S.	. .	. .	2.2	53.5	45.0	36.7	27.8	. .	. .	27 45.04	— 2.02	. .	+ 5.75	14 27 48.77	— 0.30
	28	γ Ceti.	S.	27.6	30.0	31.6	37.7	39.8	41.7	48.0	49.5	52.0	36 39.77	+ 0.82	+ 5.66	+ 5.75	2 36 46.34	+ 0.09
	29	β Ursæ Minoris, S.P.	S.	. .	. .	16.6	8.7	0.9	53.2	45.4	. .	. .	51 0.96	— 1.74	. .	+ 5.74	14 51 4.96	— 0.17
	30	α Ceti.	S.	22.7	25.4	26.8	33.0	35.0	37.1	43.2	44.8	47.4	55 35.04	+ 0.83	+ 5.76	+ 5.74	2 55 41.61	0.00
	31	48 Cephei	S.	. .	. .	56.9	5.9	15.3	24.5	33.9	. .	. .	4 15.30	+ 3.73	. .	+ 5.74	3 4 24.77	+ 0.29
	32	ζ Arietis	S.	. .	. .	. .	30.7	32.9	35.0	37.3	. .	. .	7 32.88	+ 1.02	+ 5.68	+ 5.74	3 7 39.64	+ 0.02
	33	α Persei	S.	. .	. .	. .	9.7	13.0	16.0	19.2	. .	. .	15 12.90	+ 1.54	. .	+ 5.74	3 15 20.18	+ 0.19
	34	γ^2 Ursæ Majoris, S.P.	S.	. .	. .	4.2	57.4	50.6	44.0	37.7	. .	. .	20 50.78	— 1.39	. .	+ 5.74	15 20 55.13	— 0.42
	35	11 Orionis. . . .	S.	3.3	6.0	7.7	14.0	16.0	18.1	24.4	26.0	28.7	57 16.02	+ 0.96	+ 5.72	+ 5.73	4 57 22.71	— 0.06
	36	β Orionis. . . .	S.	10.8	13.3	14.9	21.0	23.2	25.2	31.3	32.9	35.5	8 23.12	+ 0.70	+ 5.81	+ 5.72	5 8 29.54	— 0.09
	37	β Tauri	S.	59.5	2.5	4.2	11.1	13.3	15.7	22.7	24.4	27.5	18 13.41	+ 1.13	+ 5.73	+ 5.72	5 18 20.26	— 0.03
	38	Groombridge 966.	S.	. .	. .	31.2	39.3	47.0	55.0	2.8	. .	. .	22 47.06	+ 3.24	. .	+ 5.72	5 22 56.02	— 0.43
	39	ϵ Orionis. . . .	S.	31.2	33.7	35.2	41.2	43.3	45.4	51.6	53.0	55.7	29 43.37	+ 0.79	+ 5.72	+ 5.72	5 29 49.88	— 0.01
	40	α Columbæ . . .	S.	. .	. .	. .	0.1	2.7	5.2	10.2	12.0	15.0	35 0.24	+ 0.40	+ 5.69	+ 5.72	5 35 6.36	— 0.01
	41	ψ^1 Draconis, S. P. .	S.	. .	. .	16.6	9.9	2.8	55.9	49.5	. .	. .	44 2.94	— 1.37	. .	+ 5.72	17 44 7.29	— 0.01
	42	ψ^2 Draconis, S. P. .	S.	45.0	. .	31.6	. .	. .	. .	37.9	33.0	24.6	44 4.78	— 1.37	. .	+ 5.72	17 44 9.13	+ 1.78
	43	22 Camelopardalis .	S.	. .	. .	40.2	46.0	51.9	57.6	3.4	. .	. .	4 51.82	+ 2.54	. .	+ 5.71	6 5 0.07	+ 0.26
	44	δ Ursæ Minoris, S.P.	S.	. .	. .	54.5	18.7	44.8	10.5	36.5	. .	. .	12 45.00	—10.04	. .	+ 5.71	18 12 40.67	+ 0.53
	45	51 Cephei	S.	. .	. .	. .	. .	47.5	29.7	13.3	. .	. .	40 47.77	+14.65	. .	+ 5.71	6 41 8.13	+ 0.15
	46	ϵ Ursæ Minoris. .	Sk.	. .	. .	10.3	25.0	40.0	55.0	10.8	. .	. .	58 40.22	+ 6.89	. .	+ 5.66	16 58 52.77	+ 1.39
	47	μ Herculis . . .	Sk.	9.4	12.3	13.9	20.8	23.1	25.4	32.4	34.0	37.0	41 23.14	+ 1.20	+ 5.63	+ 5.66	17 41 30.00	+ 0.03
	48	γ Draconis . . .	Sk.	11.7	15.6	18.3	28.1	31.4	34.6	44.5	46.9	50.9	53 31.33	+ 1.77	. .	+ 5.66	17 53 38.76	— 0.05
	49	δ Ursæ Minoris. .	Sk.	. .	. .	11.0	45.5	20.0	55.0	28.5	. .	. .	12 20.00	+14.93	. .	+ 5.65	18 12 40.58	+ 0.42
	50	α Lyræ	Sk.	15.7	19.0	20.8	28.7	31.3	33.9	41.8	43.8	47.0	32 31.33	+ 1.40	+ 5.60	+ 5.65	18 32 38.38	+ 0.07

3, 41. Bisections at wires C_1 and C_6.
11. Transits and bisections at wires D_2 and D_3.
14. Bisections at wires V and VI.
18, 26, 27, 29, 31, 32, 33, 34, 38, 43, 46, 49. Bisections at sets B and D.
23. Transits and bisections at wires C_5 and D_3.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	0 12	10 5.0	1.6	3.8	2.7	35	. .	190	. .	220	. .	72.9	359 44 4.8	. .	— 0.3	50 50 25.7	— 1.6
2	330 38	3.0	27.7	0.5	0.1	38	. .	450	. .	400	. .	72.9	29 18 51.0	30.0	+ 34.5	80 25 46.7	— 0.9
3	43 16	9 29.0	23.5	25.0	25.5	36	890	. .	. .	. .	910	72.9	316 40 23.1	. .	— 57.8	7 45 46.5	— 3.0
4	335 36	10 1.0	26.5	27.6	28.8	39	. .	. .	. .	910	880	72.9	24 21 12.1	. .	+ 27.8	75 28 1.1	— 1.0
5	333 42	9 24.5	20.8	22.8	23.1	35	. .	900	. .	980	. .	72.9	26 14 4.7	. .	+ 30.2	77 20 56.1	— 1.6
6	348 50	23.8	19.3	20.2	22.7	35	. .	230	. .	190	. .	72.9	11 5 53.1	. .	+ 12.0	62 12 26.3	— 0.7
7	47 38	10 3.5	29.8	1.0	2.5	36	950	. .	. .	. .	890	72.9	312 18 29.4	. .	— 1 7.0	3 23 43.6	— 3.1
8	359 42	5.0	1.2	2.3	2.3	34	. .	035	. .	005	. .	72.9	0 13 46.1	. .	+ 0.2	51 20 7.5	— 1.1
9	299 44	10.2	6.9	7.3	12.4	31	800	740	. .	. .	. .	72.9	60 11 17.1	. .	+ 1 44.8	111 19 23.1	
10	299 12	7.2	3.1	8.3	8.0	33	. .	. .	. .	960	940	72.9	60 43 49.1	35.5	+ 1 47.9	111 51 58.2	
11	49 40	9 29.6	23.5	25.2	25.8	36	. .	. .	. .	195	190	74.3	310 16 16.7	. .	— 1 12.4	1 21 25.5	— 0.9
12	335 44	10 5.8	29.5	1.8	3.7	32	. .	635	. .	595	. .	74.3	24 11 25.8	30.0	+ 27.6	75 18 14.6	+ 1.0
13	341 14	6.3	0.0	1.8	4.8	33	. .	890	. .	830	. .	74.3	18 41 45.4	. .	+ 20.8	69 46 27.4	+ 0.5
14	295 4	5.4	0.3	1.7	4.8	30	. .	200	180	. .	. .	74.3	64 50 49.1	. .	+ 2 10.3	115 59 20.6	—11.6
15	297 34	9.5	6.3	7.4	9.6	41	935	870	. .	. .	. .	74.3	62 23 52.8	. .	+ 1 57.3	113 32 11.3	—10.8
16	297 34	9.5	6.3	7.4	9.6	42	. .	. .	. .	110	070	74.3	62 23 56.4	. .	+ 1 57.3	113 32 14.9	—10.8
17	343 54	10.0	5.8	5.5	8.0	31	. .	. .	. .	910	890	74.3	16 1 20.0	. .	+ 17.7	67 7 58.9	+ 0.8
18	45 30	0.0	23.5	24.4	25.7	38	580	. .	. .	. .	575	74.3	314 26 51.1	. .	— 1 2.9	5 32 9.4	+20.3
19	341 38	13.3	7.5	7.9	11.6	36	. .	875	. .	835	. .	74.3	18 18 38.1	28.0	+ 20.4	69 25 19.7	+ 0.1
20	8 26	8.5	3.5	4.7	6.6	36	. .	010	. .	980	. .	74.3	351 30 36.2	. .	— 9.2	42 36 48.2	— 2.0
21	344 46	8.0	1.3	3.1	5.7	36	. .	320	. .	230	. .	74.3	15 10 23.7	. .	+ 16.8	66 17 1.7	— 1.6
22	299 46	8.7	2.9	4.8	7.0	32	. .	090	. .	040	. .	74.3	60 9 20.3	. .	+ 1 47.4	111 17 28.9	— 5.5
23	35 42	0.8	24.4	26.2	27.0	37	. .	. .	. .	170	150	74.3	324 14 30.0	. .	— 44.8	15 20 6.4	— 2.5
24	1 6	9.8	4.1	5.1	7.9	37	. .	070	. .	110	. .	74.3	358 46 38.5	25.0	— 1.3	49 52 58.4	+ 0.6
25	312 8	3.0	27.5	0.0	1.5	33	. .	. .	. .	075	060	74.3	47 47 30.7	. .	+ 1 8.5	98 55 0.4	— 0.5
26	27 52	9 24.3	18.9	19.2	22.7	34	878	. .	. .	. .	866	74.0	332 3 48.7	. .	— 32.3	23 9 37.6	— 2.8
27	64 46	10 9.5	2.4	3.6	7.6	37	822	820	. .	. .	. .	74.0	295 10 47.8	28.0	— 2 9.1	346 4 59.9	— 0.8
28	323 46	8.7	2.9	4.7	8.8	37	. .	. .	. .	264	262	74.0	36 10 40.5	. .	+ 44.7	87 17 46.4	— 1.1
29	66 20	9 23.8	18.3	18.4	22.0	34	929	987	. .	. .	. .	74.0	293 35 48.8	27.3	— 2 19.2	344 39 50.8	0.0
30	324 38	25.3	21.0	21.9	25.8	32	. .	616	. .	540	. .	74.0	35 17 15.6	. .	+ 43.3	86 24 20.1	— 1.3
31	38 18	10 1.0	28.2	26.7	2.5	35	. .	. .	. .	065	133	74.0	321 38 0.7	27.3	— 48.4	12 43 33.5	— 2.4
32	341 38	9 29.4	24.0	24.1	28.8	37	. .	800	. .	750	. .	74.0	18 18 38.3	. .	+ 20.2	69 25 19.7	+ 0.1
33	10 26	10 13.3	8.5	8.8	12.0	30	. .	112	. .	. .	150	74.0	349 28 55.4	. .	— 11.4	40 35 5.2	— 2.7
34	68 44	8.8	2.2	2.8	7.4	38	. .	960	. .	956	. .	74.0	291 12 49.7	26.9	— 2 36.3	342 16 34.6	— 1.1
35	336 16	12.7	7.7	8.0	13.1	32	. .	377	. .	309	. .	74.0	23 39 29.0	. .	+ 27.0	74 46 17.2	— 1.0
36	312 42	6.1	0.3	1.0	6.7	32	. .	667	. .	667	. .	74.0	47 13 26.9	. .	+ 1 6.5	98 20 54.6	— 0.9
37	349 32	7.8	1.7	2.4	7.1	32	. .	282	. .	234	. .	74.0	10 23 22.1	24.2	+ 11.3	61 29 54.6	— 1.9
38	36 0	4.9	28.0	0.4	3.2	38	. .	018	. .	950	. .	74.0	323 56 46.6	. .	— 44.8	15 2 23.0	— 3.2
39	319 46	11.2	6.0	6.8	12.7	33	. .	. .	. .	574	612	74.0	40 9 47.2	. .	+ 51.9	91 17 0.3	— 0.3
40	286 56	10.3	6.3	7.0	11.2	30	. .	. .	. .	354	324	74.0	72 58 56.5	24.7	+ 3 18.8	124 8 36.5	+ 1.9
41	68 48	2.4	25.8	27.1	0.6	37	312	. .	. .	. .	316	74.0	291 8 33.6	. .	— 2 37.8	342 12 17.0	— 2.9
42																	
43	30 24	9.1	3.9	4.1	6.2	36	. .	259	. .	249	. .	74.0	329 32 24.3	24.0	— 36.2	20 38 9.3	— 2.2
44	54 24	9.7	3.5	5.1	8.5	31	. .	771	764	740	. .	74.0	305 31 16.3	. .	— 1 26.1	356 36 11.4	— 1.2
45																	
46	43 16	2.1	24.4	26.9	27.3	36	652	. .	. .	. .	661	76.5	316 40 25.4	16.8	— 58.9	7 45 47.7	— 2.8
47	348 50	13.5	8.1	9.0	11.6	33	. .	820	. .	820	. .	76.5	11 5 54.4	. .	+ 12.3	62 12 27.9	+ 0.1
48	12 32	5.0	0.6	2.5	2.2	34	. .	166	. .	138	. .	76.5	347 23 51.7	. .	— 14.0	38 29 58.9	— 0.4
49	47 38	11.3	6.4	7.0	8.9	36	. .	. .	. .	520	515	76.5	312 18 34.5	17.4	— 1 8.5	3 23 47.2	— 0.4
50	359 42	3.1	28.3	1.1	29.5	34	. .	044	. .	043	. .	76.5	0 13 47.8	. .	+ 0.2	51 20 9.2	— 0.4

No.	Barom.	At. Ther.
	in.	°
2	30.32	32.5
11	30.32	36.5
12	30.35	33.5
19	30.38	32.5
24	30.39	28.5
27	30.02	31.0
36	30.05	28.0
43	30.05	27.0
46	30.01	18.5
49	30.00	19.8

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
9	— 7.8	+ 16 17.6	. .	+ 16 9.8
10	— 7.8	— 16 17.6	. .	— 16 25.4

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
													m. s.	s.	s.	s.	h. m. s.	s.
1874. Jan. 14	1	β Lyræ	Sk.	. .	. .	14.4	16.8	19.3	21.7	26.6	28.6	31.7	45 16.88	+ 1.27	+ 5.57	+ 5.65	18 45 23.80	+ 0.11
	2	Mercury, C	Sk.	1.2	3.9	5.6	10.0	12.4	14.7	16.8	. .	. .	59 14.60	+ 0.45	. .	+ 5.64	18 59 20.69	− 0.01
	3	Venus, C	Sk.	36.8	39.5	41.2	47.8	50.0	52.3	58.8	0.5	3.4	9 50.03	+ 0.47	. .	+ 5.64	19 9 56.14	0.00
15	4	Sun I, S.	Sk.	15.3	18.1	19.7	26.3	28.3	30.6	37.3	38.9	41.7	48 28.47	+ 0.49	. .	+ 5.64	19 48 34.60	. .
	5	Sun II, N.	Sk.	35.5	38.2	39.9	46.4	48.3	50.8	57.4	58.8	1.5	50 48.53	+ 0.49	. .	+ 5.64	19 50 54.66	. .
	6	ζ Pegasi	Sk.	50.4	53.0	54.5	0.7	2.9	4.9	11.2	12.6	15.1	35 2.81	+ 0.91	+ 5.45	+ 5.60	22 35 9.32	+ 0.21
	7	ζ Arietis	Sk.	19.7	22.5	24.2	30.8	33.0	35.2	41.7	43.2	46.0	7 32.92	+ 1.03	+ 5.62	+ 5.57	3 7 39.52	− 0.09
	8	γ^2 Ursæ Majoris, S. P.	Sk.	32.9	24.0	19.3	58.8	52.5	45.5	26.0	20.8	12.1	20 52.43	− 2.00	. .	+ 5.56	15 20 55.99	+ 0.41
	9	δ Persei	Sk.	32.4	36.0	38.3	47.3	50.3	53.3	2.4	4.7	8.4	33 50.34	+ 1.58	. .	+ 5.56	3 33 57.48	− 0.07
	10	η Tauri	Sk.	39.9	42.8	44.3	51.0	53.1	55.4	2.1	3.7	6.6	39 53.21	+ 1.08	+ 5.60	+ 5.56	3 39 59.85	− 0.04
	11	γ^1 Eridani	Sk.	50.8	53.4	55.0	1.3	3.4	5.5	11.9	13.4	16.0	52 3.41	+ 0.58	+ 5.50	+ 5.55	3 52 9.54	+ 0.09
	12	B. A. C. 1247	Sk.	. .	. .	25.2	43.3	0.7	18.6	37.3	. .	. .	59 1.02	+ 8.01	. .	+ 5.55	3 59 14.58	− 2.92
	13	γ Tauri	Sk	. .	. .	26.8	29.0	31.2	33.2	35.3	. .	. .	12 31.10	+ 0.95	+ 5.71	+ 5.55	4 12 37.60	− 0.15
	14	ε Tauri	Sk.	56.2	59.0	0.7	7.2	9.4	11.5	18.0	19.6	22.2	21 9.31	+ 1.00	+ 5.64	+ 5.55	4 21 15.86	− 0.10
16	15	IV, 8	E.	. .	. .	26.7	28.9	31.4	33.7	36.2	. .	. .	53 31.38	− 0.09	. .	+ 5.26	4 53 36.55	− 0.85
	16	11 Orionis	E.	. .	. .	14.7	16.7	18.8	20.9	25.4	26.9	29.5	57 16.77	+ 0.65	+ 5.27	+ 5.25	4 57 22.67	− 0.09
	17	ε Ursæ Minoris, S. P.	E.	. .	. .	23.9	8.8	53.9	38.0	23.0	. .	. .	58 53.52	− 7.11	. .	+ 5.25	16 58 51.66	+ 0.14
	18	α Aurigæ	E.	59.6	3.4	5.5	14.1	17.0	19.8	28.8	31.4	34.8	7 17.04	+ 1.38	. .	+ 5.25	5 7 23.67	− 0.08
	19	β Orionis	E.	. .	. .	. .	24.1	26.0	28.0	32.4	33.9	36.5	8 24.04	+ 0.26	+ 5.32	+ 5.25	5 8 29.55	− 0.07
	20	β Tauri	E.	0.2	3.0	5.0	11.9	14.2	16.5	23.4	25.2	28.0	18 14.16	+ 0.90	+ 5.20	+ 5.25	5 18 20.31	+ 0.03
	21	δ Ursæ Minoris, S. P.	E.	. .	. .	0.0	25.5	51.0	17.0	42.5	. .	. .	12 51.20	−16.67	. .	+ 5.24	18 12 39.77	− 0.47
	22	μ Geminorum	E.	1.7	4.6	6.2	12.8	14.9	17.1	23.8	25.5	28.3	15 14.99	+ 0.78	+ 5.28	+ 5.24	6 15 21.01	− 0.10
	23	γ Geminorum	E.	. .	. .	16.6	18.8	20.9	23.1	25.3	. .	. .	30 20.94	+ 0.67	+ 5.17	+ 5.24	6 30 26.85	+ 0.04
	24	VI, 4	E.	. .	. .	5.0	7.3	9.6	11.8	14.4	. .	. .	31 9.62	− 0.09	. .	+ 5.24	6 31 14.77	− 1.06
	25	VI, 7	E.	53.2	56.0	58.0	5.0	7.5	9.5	16.8	18.5	21.4	38 7.32	− 0.09	. .	+ 5.23	6 38 12.46	− 1.08
	26	VI, 8	E.	35.0	36.7	41.4	43.6	46.0	48.4	50.7	55.2	57.0	39 46.00	− 0.05	. .	+ 5.23	6 39 51.18	− 1.04
	27	VI, 9	E.	22.5	25.4	27.3	34.2	36.4	38.7	45.6	47.4	50.4	52 36.43	− 0.06	. .	+ 5.23	6 52 41.60	− 1.05
	28	Weisse (2), 1656	E.	40.2	43.0	44.9	51.7	54.0	56.4	3.2	5.0	7.8	55 54.02	+ 0.87	. .	+ 5.23	6 56 0.12	− 0.95
	29	B. A. C. 2326	E.	. .	. .	50.0	6.5	22.7	37.6	54.9	. .	. .	4 22.34	+ 8.03	. .	+ 5.23	7 4 35.62	− 9.29
	30	Daphne	E.	13.3	15.9	17.5	23.3	25.4	27.6	33.6	35.0	37.6	12 25.47	+ 0.39	. .	+ 5.23	7 12 31.09	. .
	31	Feronia	E.	38.0	40.5	42.1	48.3	50.5	52.8	59.0	0.8	2.9	17 50.54	+ 0.61	. .	+ 5.23	7 17 56.38	. .
	32	Miriam	E.	. .	. .	58.5	0.6	3.3	5.5	8.0	. .	. .	25 3.18	+ 0.63	. .	+ 5.23	7 25 9.04	. .
	33	α^2 Geminorum	E.	. .	. .	26.0	28.3	30.7	33.0	37.9	39.8	42.8	26 28.30	+ 0.98	+ 5.25	+ 5.23	7 26 34.51	+ 0.22
	34	Minerva	E.	48.6	51.7	53.8	. .	. .	. .	13.0	15.6	17.8	41 3.42	+ 1.02	. .	+ 5.22	7 41 9.66	. .
	35	φ Geminorum	E.	28.2	31.0	32.9	39.6	42.0	44.3	51.1	52.9	55.8	45 41.98	+ 0.87	+ 5.20	+ 5.22	7 45 48.07	− 0.06
	36	α Ophiuchi	Sk.	45.4	47.9	49.4	55.7	57.7	0.0	6.3	7.7	10.3	28 57.82	+ 0.55	+ 5.23	+ 5.23	17 29 3.60	+ 0.03
	37	μ Herculis	Sk.	. .	. .	21.6	23.8	26.1	28.5	33.0	34.7	37.7	41 23.81	+ 0.84	+ 5.36	+ 5.23	17 41 29.88	− 0.13
	38	δ Ursæ Minoris	Sk.	36.0	2.0	7.5	43.5	18.5	51.0	26.0	. .	. .	12 18.04	+16.88	. .	+ 5.22	18 12 40.14	− 0.14
	39	α Lyræ	Sk.	. .	. .	26.6	29.4	31.9	34.7	37.2	. .	. .	32 31.96	+ 1.11	+ 5.30	+ 5.22	18 32 38.29	− 0.00
	40	Mercury, C	Sk	42.3	45.0	46.7	53.4	55.6	57.8	4.8	6.5	9.0	12 55.68	− 0.05	. .	+ 5.21	19 13 0.84	0.00
	41	Venus II, C	Sk.	30.0	33.0	34.6	41.3	43.3	45.4	52.3	54.0	56.7	20 43.40	− 0.04	. .	+ 5.21	19 20 48.57	− 0.37
17	42	Sun I, S.	Sk.	50.4	52.9	54.6	1.2	3.2	5.7	12.4	13.9	16.6	57 3.43	0.00	. .	+ 5.20	19 57 8.63	. .
	43	Sun II, N.	Sk.	. .	. .	18.7	20.9	22.9	25.1	27.3	. .	. .	59 22.98	0.00	. .	+ 5.20	19 59 28.18	. .
	44	ζ Cygni	Sk.	12.4	15.4	17.0	24.2	26.5	28.8	35.8	37.6	40.5	7 26.47	+ 0.88	+ 5.07	+ 5.19	21 7 32.54	+ 0.13
	45	α Cephei	Sk.	57.0	2.7	5.9	19.2	23.4	27.6	40.9	44.0	49.5	15 23.36	+ 2.17	. .	+ 5.19	21 15 30.72	− 0.08
	46	β Aquarii	Sk.	. .	. .	44.4	46.4	48.3	59.4	52.5	. .	. .	24 48.40	+ 0.25	+ 5.21	+ 5.19	21 24 53.84	+ 0.01
	47	ε Pegasi	Sk.	40.3	42.6	44.1	50.4	52.4	54.5	0.8	2.5	5.0	37 52.51	+ 0.50	+ 5.17	+ 5.19	21 37 58.20	+ 0.03
	48	α Aquarii	Sk.	59.6	2.0	3.5	9.6	11.7	13.8	19.8	21.5	24.0	59 11.72	+ 0.33	+ 5.11	+ 5.18	21 59 17.23	+ 0.10
	49	ζ Pegasi	Sk.	51.0	53.9	55.4	1.4	3.6	5.7	12.0	13.6	16.0	35 3.62	+ 0.51	+ 5.03	+ 5.18	22 35 9.31	+ 0.21
	50	η Tauri	Sk.	40.5	43.3	45.5	51.8	53.9	56.2	2.9	4.6	7.3	39 54.00	+ 0.79	+ 5.08	+ 5.12	3 39 59.91	+ 0.04

7, 12. Barometer observation reduced for 29.98 and 29.99.
17, 29. Bisections at set C.
30, 31, 32, 34. Wire A used.
38. Bisections at wires B_1 and D_1.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	354 16	10 8.5	6.1	6.2	5.7	37	. .	. .	. .	079	036	76.5	5 40 40.6	. .	+ 6.2	56 47 8.0	− 0.5
2	297 6	6.6	2.5	6.0	6.1	36	. .	682	. .	601	. .	76.5	62 50 32.0	. .	+ 2 1.1	113 58 54.3	
3	298 8	0.8	26.6	28.2	0.5	34	. .	990	. .	. .	948	76.5	61 48 0.1	. .	+ 1 55.8	112 56 17.1	
4	299 44	9 14.3	9.5	11.3	16.0	36	209	195	. .	. .	. .	76.5	60 12 2.1	. .	+ 1 48.4	111 20 11.7	
5	300 16	12.6	6.7	9.5	13.2	34	. .	. .	. .	170	193	76.5	59 39 30.1	18.0	+ 1 46.1	110 47 37.4	
6	331 14	10 4.0	28.0	1.2	2.9	37	. .	536	. .	461	. .	76.5	28 42 41.5	19.2	+ 34.0	79 49 36.7	− 1.3
7	341 38	10.3	2.4	4.4	8.1	36	. .	860	. .	842	. .	76.5	18 18 36.5	10.3	+ 20.9	69 25 18.6	− 1.0
8	68 44	5.3	27.3	29.0	1.8	38	. .	466	. .	355	. .	76.5	291 12 53.8	. .	− 2 42.0	342 16 33.0	− 2.6
9	8 26	7.0	1.2	3.6	4.4	36	. .	989	. .	934	. .	76.5	351 30 36.2	. .	− 9.5	42 36 47.9	− 2.1
10	344 46	9.4	2.5	4.3	7.7	35	. .	005	. .	980	. .	76.5	15 10 23.0	. .	+ 17.2	66 17 1.4	− 1.9
11	307 12	4.5	26.0	29.5	2.3	36	. .	420	. .	345	. .	76.5	52 44 23.4	. .	+ 1 23.1	103 52 7.7	− 1.0
12	44 32	7.1	0.8	1.5	3.4	37	. .	532	. .	570	. .	76.5	315 24 44.3	10.5	− 1 2.4	6 30 3.1	+ 19.9
13	336 22	3.8	26.9	0.0	2.5	34	. .	018	. .	962	. .	76.5	23 33 47.1	. .	+ 27.6	74 40 35.9	− 0.9
14	339 56	6.8	29.3	29.7	4.0	31	. .	550	. .	550	. .	76.5	19 59 11.4	11.0	+ 23.0	71 5 55.6	− 0.8
15	292 0	9 24.0	17.5	19.2	21.7	35	. .	345	. .	275	. .	78.0	67 55 58.4	. .	+ 2 35.7	119 4 55.3	− 4.3
16	336 16	10 2.2	25.0	28.5	0.3	32	. .	. .	. .	765	705	78.0	23 39 28.0	. .	+ 27.8	74 46 17.0	− 1.2
17	58 46	4.0	25.0	29.0	0.5	32	890	. .	. .	. .	900	78.0	301 9 30.6	. .	− 1 44.8	352 14 7.0	− 2.2
18	6 54	9 28.6	22.0	24.5	26.3	33	. .	220	. .	260	. .	78.0	353 1 32.0	. .	− 7.8	44 7 45.4	− 0.9
19	312 42	20.2	13.2	15.3	18.5	33	. .	. .	. .	360	310	78.0	47 13 24.8	. .	+ 1 8.6	98 20 54.6	− 1.1
20	349 32	10 1.5	23.2	25.2	27.8	32	. .	565	. .	545	. .	78.0	10 23 22.9	13.5	+ 11.6	61 29 55.7	− 0.8
21	54 24	0.2	22.2	25.0	26.0	32	345	. .	360	. .	380	78.0	305 31 18.6	. .	− 1 28.8	356 36 11.0	− 0.9
22	313 38	2.5	24.6	27.0	29.8	37	. .	405	. .	395	. .	78.0	16 18 38.6	. .	+ 18.6	67 25 18.4	− 1.2
23	337 34	5.2	29.8	0.2	4.4	37	910	875	. .	. .	. .	78.0	22 22 49.7	. .	+ 26.1	73 29 37.0	− 0.1
24	292 22	1.8	24.7	27.7	29.6	39	. .	. .	. .	000	950	78.0	67 35 2.6	. .	+ 2 33.1	118 43 56.9	+ 0.9
25	291 58	2.8	24.5	28.0	0.2	34	225	195	. .	. .	. .	78.0	67 57 49.4	. .	+ 2 36.1	119 6 46.7	+ 1.2
26	293 52	9 27.7	19.4	23 4	25.7	37	. .	615	. .	575	. .	78.0	66 4 36.8	. .	+ 2 22.5	117 13 20.5	+ 1.4
27	293 42	28.9	22.3	25.2	28.0	32	. .	780	. .	755	. .	78.0	66 13 25 0	. .	+ 2 23.5	117 22 9.7	+ 2.0
28	348 4	10 0.3	21.8	24.2	26.5	35	. .	885	. .	865	. .	78.0	11 52 12.5	13.5	+ 13.4	62 58 47.1	+ 5.6
29	43 40	9 23.2	15.5	18.6	19.1	34	145	. .	175	. .	170	78.0	316 15 39.6	13.5	− 1 0.8	7 21 0.0	+ 9.8
30	320 48	10 3.6	27.5	29.3	3.2	37	. .	245	. .	215	. .	78.0	39 6 5.2	. .	+ 51.6	90 13 18.0	− 3.0
31	334 26	4.8	25.8	29.5	2.5	36	. .	220	. .	200	. .	78.0	25 27 49.4	. .	+ 30.3	76 34 40.9	− 2.4
32	335 18	10.8	3.1	5.0	7.2	32	. .	530	. .	440	. .	78.0	24 34 58.2	. .	+ 29.1	75 41 48.5	− 1.9
33	353 12	4.3	26.5	0.2	1.5	33	. .	. .	. .	460	440	78.0	6 43 40.8	. .	+ 7.5	57 50 9.5	− 0.4
34	354 32	9 29.2	22.2	24.2	26.3	39	. .	000	. .	890	. .	78.0	5 22 26.2	13.0	+ 6.0	56 28 53.4	− 0.4
35	348 8	10 5.1	27.5	0.2	2.9	34	. .	525	. .	465	. .	78.0	11 47 57.1	. .	+ 13.3	62 54 31.6	− 0.6
36	333 42	1.9	26.2	28.5	0.2	35	. .	250	. .	214	. .	76.8	26 14 5.0	. .	+ 31.1	77 20 57.3	− 1.5
37	348 50	0.8	24.0	24.8	28.3	34	. .	. .	. .	720	670	76.8	11 5 55.0	20.1	+ 12.4	62 12 28.6	+ 0.2
38	47 38	5.9	1.0	1.5	4.0	36	758	. .	. .	721	. .	76.8	312 18 32.7	. .	− 1 9.0	3 23 44.9	− 3.4
39	359 42	4.4	0.5	1.5	2.2	33	. .	964	. .	902	. .	76.8	0 13 48.1	. .	+ 0.3	51 20 9.6	− 0.6
40	297 16	4.4	29.5	1.5	4.1	33	. .	640	. .	525	. .	76.8	62 39 42.6	25.5	+ 2 0.1	113 48 3.9	
41	298 24	9 28.4	26.5	25.5	28.5	39	. .	471	. .	300	. .	76.8	61 33 6.3	. .	+ 1 54.7	112 41 22.2	
42	300 8	10 14.8	8.5	11.7	17.1	37	360	193	. .	. .	. .	76.8	59 48 49.1	26.5	+ 1 46.6	110 56 56.9	
43	300 40	8.1	2.0	4.7	9.7	35	. .	. .	. .	600	570	76.8	59 16 17.6	. .	+ 1 44.3	110 24 23.1	
44	350 46	3.5	0.3	1.0	2.5	38	. .	265	. .	225	. .	76.8	9 10 53.7	33.6	+ 9.9	60 17 24.8	− 1.1
45	23 6	3.2	0.3	1.5	1.4	38	. .	505	. .	509	. .	76.8	336 50 58.0	. .	− 26.2	27 56 53.0	− 2.0
46	314 56	2.5	29.1	1.4	3.5	35	. .	668	. .	628	. .	76.8	45 0 13.6	. .	+ 1 1.2	96 7 36.0	− 1.5
47	330 21	8 1.9 12 3.0	22.6 22.4	24.5 24.0	27.2 26.0	36	. .	367	. .	360	. .	76.8	29 35 19.5	34.1	+ 34.7	90 42 15.4	+ 1.6
48	320 8	10 7.9	3.9	5.5	8.5	37	. .	680	. .	602	. .	76.8	39 48 48.9	. .	+ 51.0	90 56 1.1	− 0.1
49	331 14	4.9	28.5	0.0	2.1	37	. .	639	. .	605	. .	76.8	28 42 43.6	33.3	+ 33.6	79 49 38.4	+ 0.1
50	344 46	8.1	0.8	2.0	5.1	36	. .	083	. .	045	. .	77.5	15 10 23.2	. .	+ 17.0	66 17 1.4	− 1.9

No.	Barom.	At. Ther.
	in.	°
1	29.98	21.1
2	29.94	21.2
3	30.98	15.5
12	30.99	15.0
14	29.99	15.0
20	30.28	18.0
21	30.48	18.8
40	30.48	24.3
42	30.47	25.5
44	30.44	28.0
47	30.50	42.6
50	30.45	28.8

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′
2	− 5.6	. .	0.0	− 5.6
3	− 4.6	. .	0.0	− 4.6
4	− 7.8	− 16 17.1	. .	− 16 24.9
5	− 7.7	+ 16 17.1	. .	+ 16 9.4
40	− 5.6	. .	0.0	− 5.6
41	− 4.6	. .	0.0	− 4.6
42	− 7.7	− 16 16.9	. .	− 16 24.6
43	− 7.7	+ 16 16.9	. .	+ 16 9.2

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s	s.
Jan. 17	1	ζ Persei	Sk.	52.5	55.4	57.2	4.4	6.9	9.3	16.5	18.2	21.0	46 6.82	+ 0.95	+ 5.20	+ 5.12	3 46 12.89	− 0.09
	2	γ^1 Eridani	Sk.	51.6	54.2	55.8	2.0	4.1	6.3	12.8	14.3	16.8	52 4.21	+ 0.14	+ 5.12	+ 5.12	3 52 9.47	+ 0.04
	3	B. A. C. 1247	Sk.	. .	. .	24.4	42.5	1.8	19.1	37.9	. .	. .	59 1.14	+ 9.23	. .	+ 5.12	3 59 15.49	− 2.67
	4	γ Tauri	Sk.	19.3	21.9	23.5	29.9	32.1	34.3	40.5	42.0	44.7	12 32.02	+ 0.63	+ 5.10	+ 5.12	4 12 37.77	+ 0.03
	5	ε Tauri	Sk.	57.1	59.8	1.4	7.9	9.9	12.0	18.8	20.4	23.0	21 10.03	+ 0.69	+ 5.22	+ 5.12	4 21 15.84	− 0.11
	6	α Tauri (R.)	Sk.	25.2	28.0	29.7	35.9	38.0	40.2	46.5	48.2	50.8	28 38.06	− 0.91	. .	+ 5.11	4 28 42.26	+ 0.37
	7	9 Camelopard. (R.)	Sk.	59.9	6.1	9.9	24.9	30.0	35.3	50.3	54.0	0.4	41 30.09	− 0.97	. .	+ 5.11	4 41 34.23	+ 0.05
	8	δ Ursæ Minoris, S. P.	Sk.	34.5	8.5	0.0	26.0	51.5	17.0	42.5	34.5	8.0	12 51.39	−16.69	. .	+ 5.10	18 12 39.80	− 0.52
19	9	δ Ursæ Minoris	E.	. .	. .	11.0	45.5	19.0	53.5	29.0	. .	. .	12 19.60	+16.36	. .	+ 4.71	18 12 40.67	+ 0.08
	10	α Lyræ	E.	17.3	20.5	22.4	30.3	32.9	35.6	43.4	45.3	48.6	32 32.92	+ 0.75	+ 4.75	+ 4.72	18 32 38.39	− 0.01
	11	ζ Aquilæ	E.	17.8	20.5	21.9	. .	. .	. .	. .	. .	. .	59 30.41	+ 0.21	+ 4.75	+ 4.72	18 59 35.34	+ 0.05
20	12	Sun I, N.	E.	36.2	39.0	40.4	47.2	49.5	51.6	57.0	59.7	2.5	9 49.33	− 0.36	. .	+ 4.72	20 9 53.69	. .
	13	Sun II, S.	E.	55.2	58.2	59.7	6.2	8.3	10.5	17.0	18.8	21.3	12 8.36	− 0.36	. .	+ 4.72	20 12 12.72	. .
	14	α Cygni	E.	. .	. .	. .	0.1	3.0	5.9	11.8	13.8	17.5	37 0.16	+ 0.94	+ 4.69	+ 4.72	20 37 5.82	+ 0.08
	15	ζ Cygni	E.	13.1	16.1	17.8	24.9	27.2	29.5	36.5	38.4	41.2	7 27.19	+ 0.53	+ 4.67	+ 4.72	21 7 32.48	− 0.06
22	16	α Andromedæ	S.	31.4	34.3	36.0	42.9	45.3	47.5	54.5	56.2	59.2	1 45.26	+ 0.80	+ 5.17	+ 5.15	0 1 51.21	0.00
	17	γ Pegasi	S.	25.4	28.0	29.5	35.8	38.0	40.2	46.4	48.0	50.6	6 37.99	+ 0.64	+ 5.12	+ 5.15	0 6 43.78	+ 0.03
	18	Moon I	S.	30.2	32.6	34.2	40.7	42.6	44.7	50.8	52.5	55.2	20 42.61	+ 0.48	. .	+ 5.15	0 20 48.24	+67.66
	19	β Ceti	S.	56.7	59.4	5.3	7.3	9.7	11.8	14.0	19.8	22.6	37 9.62	+ 0.30	+ 5.16	+ 5.15	0 37 15.07	+ 0.04
	20	Polaris	S.	. .	. .	43.0	12.0	40.0	4.0	32.0	. .	. .	11 38.20	+21.56	. .	+ 5.15	1 12 4.91	− 1.35
23	21	Moon I, S.	Sk.	9.9	12.5	14.1	20.3	22.5	24.4	30.9	32.4	35.0	13 22.44	+ 0.78	. .	+ 5.62	1 13 28.84	+67.51
	22	β Arietis	Sk.	20.6	23.5	25.0	31.5	33.8	35.8	42.3	44.0	46.8	47 33.70	+ 0.91	+ 5.66	+ 5.62	1 47 40.23	− 0.02
	23	α Arietis	Sk.	. .	. .	. .	. .	. .	. .	6.3	7.7	10.6	59 57.30	+ 0.93	+ 5.66	+ 5.62	2 0 3.85	+ 0.07
	24	ξ^1 Ceti	Sk.	. .	. .	8.3	10.4	12.4	14.5	16.6	. .	. .	6 12.44	+ 0.81	+ 5.65	+ 5.62	2 6 18.87	+ 0.01
	25	ι Cassiopeæ Com.	Sk.	4.7	11.4	15.4	. .	. .	. .	. .	0.6	7.0	18 35.07	+ 1.72	. .	+ 5.62	2 18 43.31	+ 2.12
	26	ι Cassiopeæ	Sk.	. .	. .	21.2	29.5	34.8	39.8	45.2	. .	. .	18 34.10	+ 1.72	. .	+ 5.62	2 18 41.04	− 0.15
24	27	β Arietis	E.	20.4	22.9	24.6	31.3	33.4	35.5	42.0	43.8	46.4	47 33.37	+ 1.44	+ 5.52	+ 5.58	1 47 40.31	+ 0.08
	28	α Arietis	E.	43.5	46.3	48.0	54.6	56.8	59.0	5.8	7.5	10.3	59 56.87	+ 1.44	+ 5.46	+ 5.48	2 0 3.79	+ 0.03
	29	Moon I, S.	E.	10.0	12.8	14.2	20.7	23.0	25.0	31.5	32.9	35.6	6 22.86	+ 1.44	. .	+ 5.49	2 6 29.79	+68.17
	30	γ Ceti	E.	27.0	29.7	31.2	37.4	39.4	41.4	47.5	49.0	51.5	36 39.34	+ 1.42	+ 5.40	+ 5.49	2 36 46.25	+ 0.12
	31	α Ceti	E.	22.4	25.0	26.6	32.6	34.7	36.7	42.8	44.4	47.0	55 34.69	+ 1.42	+ 5.40	+ 5.49	2 55 41.60	+ 0.11
	32	ζ Arietis	E.	19.5	22.3	24.0	30.5	32.6	34.8	41.4	43.0	45.7	7 32.64	+ 1.44	+ 5.38	+ 5.50	3 7 39.58	+ 0.08
	33	δ Ursæ Minoris, S. P.	E.	. .	. .	46.0	11.0	35.5	1.0	26.0	. .	. .	12 35.90	− 0.02	. .	+ 5.52	18 12 41.40	− 0.02
	34	μ Geminorum	E.	0.7	3.5	5.4	11.8	14.0	16.2	22.9	24.7	27.4	15 14.07	+ 1.44	+ 5.55	+ 5.52	6 15 21.03	− 0.07
	35	VI, 3	E.	43.8	46.9	48.6	55.6	58.0	0.2	7.4	9.0	12.0	29 57.94	+ 1.40	. .	+ 5.52	6 30 4.86	− 1.06
	36	VI, 4	E.	54.0	57.1	59.0	5.9	8.1	10.4	17.5	19.2	22.0	31 8.13	+ 1.40	. .	+ 5.52	6 31 15.05	− 1.04
	37	VI, 7	E.	51.6	54.5	56.4	3.4	5.7	8.0	15.1	16.8	19.9	38 5.71	+ 1.40	. .	+ 5.52	6 38 12.63	− 1.05
	38	VI, 8	E.	30.6	33.6	35.4	42.0	44.3	46.7	53.6	55.4	58.3	39 44.43	+ 1.40	. .	+ 5.52	6 39 51.35	− 1.03
	39	ε Canis Majoris	E.	20.7	23.6	25.4	32.3	34.6	36.9	44.0	45.8	48.6	53 34.66	+ 1.40	+ 5.54	+ 5.52	6 53 41.52	− 0.07
	40	Anonymous	E.	58.0	0.6	2.1	8.3	10.4	12.3	18.5	20.0	22.6	5 10.31	+ 1.42	. .	+ 5.53	7 5 17.26	. .
	41	Anonymous	E.	. .	. .	. .	35.0	37.0	39.0	43.5	45.3	47.6	9 35.01	+ 1.43	. .	+ 5.53	7 9 41.97	. .
	42	Miriam	E.	49.5	52.0	54.2	0.3	2.3	4.3	10.6	12.2	15.4	17 2.31	+ 1.43	. .	+ 5.53	7 17 9.27	. .
	43	α^2 Geminorum	E.	13.0	16.0	17.8	24.9	27.5	29.9	37.0	38.9	41.9	26 27.43	+ 1.45	+ 5.73	+ 5.53	7 26 34.41	+ 0.05
	44	Minerva	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	45	φ Geminorum	E.	27.2	30.2	32.0	38.7	41.0	43.3	50.3	52.0	54.7	45 41.04	+ 1.44	+ 5.65	+ 5.53	7 45 48.01	− 0.20
	46	Anonymous	E.	44.5	47.0	49.6	. .	. .	. .	5.0	7.1	10.4	59 57.27	+ 1.42	. .	+ 5.53	8 0 3.22	. .
25	47	μ Herculis	S.	. .	. .	18.2	20.6	22.9	25.0	27.6	. .	. .	41 22.86	+ 1.36	+ 6.01	+ 6.09	17 41 30.31	+ 0.05
	48	γ Draconis	S.	11.4	15.6	18.1	27.8	31.2	34.5	44.4	46.8	50.9	53 31.19	+ 1.79	. .	+ 6.10	17 53 39.08	− 0.02
	49	α Lyræ	S.	15.2	18.5	20.6	28.2	30.7	33.5	41.4	43.3	46.5	32 30.88	+ 1.52	+ 6.14	+ 6.10	18 32 38.50	− 0.02
	50	β Lyræ	S.	1.6	4.7	6.6	13.9	16.3	18.8	26.0	28.0	31.0	45 16.32	+ 1.44	+ 6.16	+ 6.10	18 45 23.86	− 0.03

3. Bisections probably at wires C_2 and C_4.
21. Bisections at wires B_3, C_1, C_5, and D_3.
29. Bisections at wires II–VI.
40. Observed for Daphne.
40, 41, 42, 44, 46. Wire A used.
41. Observed for Feronia.
46. Observed for Arethusa.
48. Telescope micrometer reading decreased one revolution in reduction.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	352 34	10 7.1	0.6	1.1	5.5	38	. .	025	. .	990	. .	77.5	7 22 52.6	. .	+ 8.1	58 29 21.9	— 1.7
2	307 12	5.0	0.0	0.1	4.0	36	. .	335	. .	240	. .	77.5	52 44 24.7	. .	+ 1 22.5	103 52 8.4	— 0.5
3	44 32	5.8	26.6	29.0	1.9	37	. .	576	. .	588	. .	77.5	315 24 43.1	20.8	— 1 2.0	6 30 2.3	+ 20.3
4	336 22	2.4	25.0	26.7	1.0	34	. .	051	. .	057	. .	77.5	23 32 47.1	. .	+ 27.5	74 39 35.8	— 1.0
5	339 56	5.8	1.5	29.5	4.5	31	. .	. .	. .	612	600	77.5	19 59 14.1	. .	+ 22.9	71 5 58.2	+ 1.7
6	202 34	7.7	1.7	2.5	3.0	34	. .	822	. .	. .	. .	77.5	157 22 3.4	. .	— 26.3	73 44 44.1	+ 5.0
7	152 42	7.0	29.2	1.0	3.9	33	211	105	. .	075	110	77.5	207 13 35.6	19.8	+ 32.4	23 52 13.2	+ 0.5
8	54 24	4.0	26.0	27.7	0.9	32	243	. .	. .		198	77.5	305 31 18.5	16.9	— 1 28.7	356 36 11.0	— 0.5
9	47 38	8.5	3.5	0.5	6.5	36	805	. .	. .	. .	785	75.0	312 18 32.6	41.5	— 1 5.7	3 23 48.1	— 1.3
10	359 42	9 25.8	21.0	22.0	22.7	34	. .	745	. .	735	. .	75.0	0 13 49.4	. .	+ 0.2	51 20 10.8	— 0.3
11	334 44	24.8	19.7	20.1	24.4	38	. .	290	. .	270	. .	75.0	25 12 42.7	. .	+ 28.2	76 19 32.1	+ 0.8
12	301 18	10 12.6	7.4	12.6	16.2	36	965	910	. .	. .	. .	75.0	58 38 41.2	43.7	+ 1 37.7	109 46 40.1	
13	300 46	13.3	8.7	11.3	15.8	38	. .	. .	. .	950	940	75.0	59 11 13.3	. .	+ 1 39.7	110 19 14.2	
14	5 52	9 29.3	23.7	26.7	29.2	35	. .	. .	. .	140	100	75.0	354 4 0.1	. .	— 6.2	45 10 15.1	— 0.7
15	350 46	4.0	28.2	0.7	3.7	38	. .	540	. .	520	. .	75.0	9 10 56.1	. .	+ 9.7	60 17 27.0	+ 0.3
16																	
17																	
18																	
19																	
20																	
21	326 7	8 7.7 / 12 6.6	4.5 / 4.0	5.5 / 5.7	10.7 / 11.1	30	. .	831	875	708	564	72.9	33 48 0.0	56.2	+ 38.6	84 54 59.8	
22	341 14	10 24.5	18.5	16.1	20.0	33	. .	004	. .	975	. .	72.9	18 41 47.9	. .	+ 19.6	69 48 28.7	+ 1.3
23	343 54	10 24.1	14.4	17.6	21.9	31	. .	. .	. .	205	188	72.9	16 1 20.0	. .	+ 16.7	67 7 57.9	— 0.7
24	329 18	10.0	4.5	4.0	5.4	33	. .	. .	. .	920	851	72.9	30 37 47.5	. .	+ 34.4	81 44 43.1	— 0.5
25	27 52	3.1	26.9	26.5	25.9	34	. .	580	637	. .	. .	72.9	332 3 51.0	. .	— 30.8	23 9 41.4	
26	27 52	3.1	26.9	26.5	25.9	34	. .	. .	. .	393	316	72.9	332 3 47.9	. .	— 30.8	23 9 38.3	— 1.8
27	341 14	13.9	9.3	9.0	12.7	33	. .	435	. .	395	. .	74.4	18 41 46.7	. .	+ 20.3	69 48 28.2	+ 0.7
28	343 54	9.3	5.0	6.2	7.6	31	. .	930	. .	900	. .	74.4	16 1 19.6	38.5	+ 17.3	67 7 58.1	— 0.5
29	332 30	12.5	8.8	9.1	11.6	35	000	840	700	570	320	74.4	27 20 20.7	. .	+ 31.2	78 27 13.1	
30	323 46	10.2	5.8	6.6	9.3	37	. .	160	. .	080	. .	74.4	36 10 40.1	. .	+ 44.3	87 17 45.6	— 2.5
31	324 35	12.0	7.8	9.3	10.8	31	. .	515	. .	465	. .	74.4	35 17 15.9	. .	+ 42.9	86 24 20.0	— 1.8
32	341 38	14.3	10.0	10.5	12.7	36	. .	765	. .	730	. .	74.4	18 18 38.4	36.0	+ 20.1	69 25 19.7	— 0.1
	54 24	6.0	0.8	2.3	2.4	31	845	. .	800	. .	850	74.4	305 31 13.9	. .	— 1 26.2	356 36 8.9	— 1.8
34	343 38	10.9	6.2	7.1	9.5	37	. .	030	. .	000	. .	74.4	16 18 39.0	30.0	+ 18.0	67 25 18.2	— 1.2
35	291 6	1.0	26.2	28.2	29.2	37	500	495	. .	. .	. .	74.4	68 50 35.9	. .	+ 2 38.3	119 59 35.4	— 1.2
36	292 22	4.4	29.4	1.9	3.4	39	. .	330	. .	320	. .	74.4	67 25 8.0	. .	+ 2 28.7	118 43 57.9	— 1.1
37	291 58	6.5	1.5	3.5	4.6	34	. .	420	. .	345	. .	74.4	67 57 54.0	. .	+ 2 31.5	119 6 46.7	— 0.8
38	293 52	0.9	26.0	28.3	0.0	37	. .	865	. .	825	. .	74.4	66 4 41.8	. .	+ 2 18.5	117 13 21.5	— 0.6
39	292 16	10.2	4.8	7.5	9.5	31	. .	555	. .	550	. .	74.4	67 39 14.7	. .	+ 2 29.2	118 48 5.1	— 2.0
40	321 28	8.0	2.8	8.3	7.3	30	. .	790	. .	775	. .	74.4	38 24 28.6	. .	+ 49.0	89 31 38.8	
41	334 48	14.0	10.5	10.7	13.5	29	. .	. .	. .	570	470	74.4	25 4 15.2	. .	+ 28.9	76 11 5.3	
42	335 38	15.0	9.0	10.3	12.7	30	. .	380	. .	365	. .	74.4	24 14 27.5	. .	+ 27.8	75 21 16.5	— 1.9
43	353 12	6.4	1.2	4.2	4.7	33	. .	349	. .	320	. .	74.4	6 43 38.4	. .	+ 7.3	57 50 6.9	— 2.4
44	354 38	12.0	7.5	8.8	10.9	39	. .	850	. .	660	. .	74.4	5 16 49 4	. .	+ 5.7	56 23 16.3	— 0.4
45	345 8	8.5	3.3	5.4	7.5	34	. .	310	. .	250	. .	74.4	11 47 55.0	27.5	+ 12.9	62 54 29.1	+ 1.1
46	325 6	4.0	29.6	0.8	2.2	31	. .	010	. .	090	. .	74.4	34 46 27.7	27.0	+ 43.0	85 53 31.9	
47	345 50	1.2	25.2	26.2	0.3	34	. .	. .	. .	835	823	76.4	11 5 57.9	. .	+ 12.3	62 12 31.4	+ 0.7
48	12 32	5.6	0.5	2.2	4.8	35	. .	364	. .	288	. .	76.4	347 23 55.0	24.0	— 14.0	38 30 2.2	— 0.6
49	359 42	4.0	29.5	29.8	3.2	34	. .	148	. .	228	. .	76.4	0 13 51.1	. .	+ 0.2	51 20 12.5	— 0.3
50	354 16	7.3	3.4	2.9	6.5	37	. .	412	. .	300	. .	76.4	5 40 43.0	. .	+ 6.2	56 47 10.4	— 1.2

No.	Barom.	At. Ther.
	in.	°
3	30.46	24.0
7	30.46	23.8
9	30.46	20.9
10	30.30	40.5
12	30.31	42.0
26	30.04	57.6
27	30.32	41.0
32	30.38	38.0
34	30.44	33.0
37	30.44	30.0
48	30.58	23.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
12	— 7.6	+ 16 17.0	. .	+ 16 9.4
13	— 7.7	— 16 17.0	. .	— 16 24.7
21	—32 48.9	— 16 11.9	. .	— 49 0.8
29	—26 49.0	— 16 3.5	. .	— 42 52.5

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Jan. 26	1	Sun I, S	S.	43.9	46.6	48.1	. .	. .	. .	5.4	7.2	9.7	34 56.82	+ 0.8	. .	+ 6.14	20 35 3.84	. .
	2	Sun II, N	S.	. .	. .	10.0	12.3	. .	16.4	18.8	. .	. .	37 14.38	+ 0.88	. .	+ 6.14	20 37 21.40	. .
28	3	α Orionis	E.	1.9	4.4	6.0	12.0	14.2	16.3	22.5	24.0	26.5	48 14.20	+ 1.04	+ 6.44	+ 6.47	5 48 21.71	0.00
	4	Moon I, N.	E.	41.8	44.8	46.5	53.6	55.9	58.3	5.4	7.1	10.1	56 55.94	+ 1.16	. .	+ 6.47	5 57 3.57	+72.49
	5	22 Camelopardalis	E.	. .	. .	40.0	45.9	51.6	57.3	3.0	. .	. .	4 51.56	+ 1.83	. .	+ 6.47	6 4 59.86	+ 0.24
	6	δ Ursæ Minoris, S. P.	E.	. .	. .	49.0	14.0	40.0	5.0	31.0	. .	. .	12 39.80	− 4.36	. .	+ 6.47	18 12 41.91	− 0.03
	7	μ Geminorum	E.	0.0	3.0	4.6	11.3	13.5	15.7	22.1	24.0	26.7	15 13.43	+ 1.12	+ 6.50	+ 6.47	6 15 21.02	− 0.07
	8	VI, 3	E.	43.0	46.2	48.0	55.0	57.5	59.8	6.9	8.6	11.5	29 57.39	+ 0.82	. .	+ 6.47	6 30 4.68	− 1.03
	9	VI, 4	E.	53.8	56.6	58.4	5.4	7.6	9.9	17.0	18.9	21.6	31 7.69	+ 0.83	. .	+ 6.48	6 31 15.00	− 1.02
	10	51 Cephei	E.	. .	. .	28.0	10.5	53.0	34.5	18.0	. .	. .	40 52.80	+ 7.55	. .	+ 6.48	6 41 6.83	0.00
	11	Daphne	E.	54.5	57.4	59.0	4.9	7.0	8.8	15.2	16.7	19.4	2 6.99	+ 1.00	. .	+ 6.48	7 2 14.47	. .
	12	δ Geminorum	E.	15.9	18.7	20.5	26.9	29.2	31.4	38.0	39.7	42.4	12 29.19	+ 1.12	+ 6.47	+ 6.48	7 12 36.79	− 0.05
	13	VII, 4	E.	32.8	35.8	37.5	44.5	47.0	49.5	56.0	58.5	1.5	13 47.08	+ 0.81	. .	+ 6.48	7 13 54.37	− 1.11
	14	α^2 Geminorum	E.	12.5	15.6	17.5	24.4	26.8	29.2	36.5	38.4	41.4	26 26.92	+ 1.10	+ 6.50	+ 6.48	7 26 34.59	+ 0.22
	15	α Canis Minoris	E.	23.3	25.9	27.4	33.6	35.7	37.7	43.9	45.5	47.9	32 35.66	+ 1.02	+ 6.51	+ 6.49	7 32 43.17	− 0.18
	16	Anonymous	E.	49.0	52.2	54.0	1.5	3.8	6.3	13.9	15.5	18.5	36 3.86	+ 1.20	. .	+ 6.49	7 36 11.55	− 1.23
	17	β Geminorum	E.	15.8	18.7	20.4	27.4	29.7	32.0	38.9	40.7	43.7	37 29.70	+ 1.10	+ 6.48	+ 6.49	7 37 37.35	− 0.02
	18	α Lyræ	F.	14.9	18.2	20.1	28.0	30.6	33.2	41.0	42.9	46.2	32 30.57	+ 1.30	+ 6.67	+ 6.71	18 32 38.64	+ 0.06
	19	51 Cephei, S. P.	F.	. .	. .	. .	53.5	12.0	30.0	. .	. .	. .	41 11.73	− 9.95	. .	+ 6.71	6 41 8.49	+ 1.70
	20	γ Aquilæ	F.	54.5	57.0	58.5	4.7	6.8	8.0	15.0	16.7	19.2	40 6.81	+ 1.02	+ 6.67	+ 6.72	19 40 14.56	+ 0.08
29	21	Sun I, N.	F.	7.5	10.2	11.9	18.0	20.1	22.4	28.9	30.6	33.0	47 20.29	+ 0.70	. .	+ 6.73	20 47 27.78	. .
	22	Sun II, S.	F.	27.4	29.0	33.1	35.4	37.5	39.7	41.8	46.0	47.8	49 37.52	+ 0.66	. .	+ 6.73	20 49 44.91	. .
	23	ϵ Pegasi	F.	38.3	40.7	42.4	48.5	50.4	52.6	58.7	0.4	3.0	37 50.56	+ 1.02	+ 6.63	+ 6.74	21 37 58.32	+ 0.12
	24	α Andromedæ	F.	29.4	32.2	34.0	41.0	43.2	45.6	52.0	54.3	57.2	1 43.28	+ 1.22	+ 6.67	+ 6.77	0 1 51.27	+ 0.12
	25	γ Pegasi	F.	23.3	26.0	27.6	33.8	35.9	38.0	44.3	45.9	48.7	6 35.94	+ 1.07	+ 6.68	+ 6.77	0 6 43.78	+ 0.09
	26	δ Orionis	F.	14.7	17.4	18.8	24.8	26.9	28.9	35.2	36.7	39.2	25 26.96	+ 0.88	+ 6.93	+ 6.82	5 25 34.66	− 0.12
	27	ϵ Orionis	F.	29.8	32.4	33.9	40.0	42.0	44.0	50.2	51.8	54.2	29 42.03	+ 0.87	+ 6.91	+ 6.82	5 29 49.72	− 0.10
	28	α Columbæ	F.	43.7	46.9	48.7	56.1	58.7	1.2	8.5	10.4	13.4	34 58.62	+ 0.56	+ 6.98	+ 6.83	5 35 6.01	− 0.19
	29	ψ^1 Draconis, S. P.	F.	41.8	33.6	28.4	8.4	1.0	55.0	34.6	29.8	21.5	44 1.63	− 0.69	. .	+ 6.83	17 44 7.77	− 0.19
	30	α Orionis	F.	. .	. .	. .	. .	. .	. .	. .	23.6	26.2	48 13.83	+ 0.95	+ 6.90	+ 6.83	5 48 21.61	− 0.10
	31	Anonymous	F.	55.6	58.3	59.9	6.2	8.5	10.6	17.5	19.0	21.8	57 8.60	+ 1.05	. .	+ 6.83	5 57 16.48	− 0.70
	32	Anonymous	F.	27.7	30.6	32.3	38.9	40.8	43.0	49.7	51.3	53.8	1 40.90	+ 1.05	. .	+ 6.83	6 1 48.78	−0.72
	33	Anonymous	F.	. .	. .	. .	. .	. .	10.2	14.8	16.3	18.6	2 5.94	+ 1.05	. .	+ 6.83	6 2 13.82	− 0.72
	34	Anonymous	F.	9.0	11.7	13.4	17.6	19.6	21.9	. .	. .	. .	17 21.91	+ 1.05	. .	+ 6.83	6 17 29.79	− 0.78
	35	Anonymous	F.	. .	. .	. .	. .	5.0	7.3	11.6	13.0	15.9	18 2.90	+ 1.05	. .	+ 6.83	6 18 10.78	− 0.78
	36	51 Cephei	F.	. .	. .	22.5	7.5	49.0	31.0	13.5	. .	. .	40 48.70	+11.22	. .	+ 6.84	6 41 6.76	+ 0.02
	37	ϵ Canis Majoris	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	38	Moon I	F.	0.2	3.0	4.9	12.0	14.3	16.6	23.6	25.5	28.4	57 14.28	+ 1.14	. .	+ 6.84	6 57 22.26	+71.99
31	39	51 Cephei	Sk	. .	. .	21.0	3.0	46.0	28.8	11.5	. .	. .	40 46.06	+13.02	. .	+ 7.35	6 41 6.43	− 0.07
	40	Weisse (2), 1656	Sk.	37.6	40.6	42.2	49.2	51.3	53.6	0.5	2.4	5.3	55 51.41	+ 1.14	. .	+ 7.35	6 55 59.90	− 0.69
	41	B. A. C. 2326	Sk.	45.5	7.3	18.5	6.0	22.7	38.4	26.0	38.0	57.7	4 22.23	+ 5.41	. .	+ 7.35	7 4 34.09	− 9.05
	42	δ Geminorum	Sk.	14.9	17.6	19.4	26.0	28.3	30.5	37.2	38.8	41.6	12 28.26	+ 1.08	+ 7.44	+ 7.35	7 12 36.69	− 0.15
	43	α^2 Geminorum	Sk.	11.7	14.7	16.6	23.7	26.0	28.0	35.8	37.5	40.7	26 26.14	+ 1.21	+ 7.27	+ 7.35	7 26 34.70	+ 0.32
	44	α Canis Minoris	Sk.	22.7	25.3	26.7	32.8	34.9	36.9	43.1	44.7	47.2	32 34.92	+ 0.90	+ 7.38	+ 7.35	7 32 43.17	− 0.19
	45	B. A. C. 2585	Sk.	. .	. .	45.3	6.3	27.3	48.9	9.7	. .	. .	46 27.50	+ 6.85	. .	+ 7.35	7 46 41.70	−13.68
	46	Moon I, N.	Sk.	52.4	55.2	56.8	. .	. .	. .	15.0	16.8	19.4	51 5.93	+ 1.09	. .	+ 7.36	8 51 14.38	+67.83
	47	ϵ Leonis	Sk.	21.0	24.0	25.5	32.1	34.5	36.0	43.4	45.0	48.0	38 34.46	+ 1.11	+ 7.38	+ 7.37	9 38 42.94	− 0.07
	48	μ Leonis	Sk.	14.7	17.6	19.3	26.0	28.4	30.7	37.5	39.2	42.0	45 28.38	+ 1.14	+ 7.34	+ 7.37	9 45 36.89	+ 0.02
Feb. 3	49	α Aquilæ	Sk.	15.3	18.0	19.5	25.6	27.8	29.8	36.2	37.6	40.0	44 27.76	+ 0.67	+ 8.15	+ 8.23	19 44 36.66	+ 0.12
	50	α Cygni	Sk.	39.0	42.7	44.7	53.3	56.2	59.2	7.7	9.9	13.6	36 56.26	+ 1.33	+ 8.29	+ 8.24	20 37 5.83	− 0.03

5. Bisections at set C.
7, 16, 29, 39, 41, 45. Bisections at sets B and D.
11, 32, 46. Wire A used.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	302 10	10 4.5	0.6	2.4	6.8	33	723	. .	. .	. .	. .	76.4	57 45 44.7	. .	+ 1 38.0	108 53 43.9	
2	302 42	1.4	27.5	29.4	3.6	31	. .	. .	. .	. .	972	76.4	57 13 16.4	29.2	+ 1 36.0	108 21 13.6	
3	328 26	9.7	5.3	5.7	7.5	34	. .	830	. .	780	. .	74.6	31 30 4.0	39.0	+ 36.6	82 37 1.8	0.0
4	348 20	9.0	2.1	4.5	6.9	31	660	660	670	600	560	74.6	11 35 14.1	. .	+ 12.2	62 41 47.5	
5	30 24	12.0	5.5	7.2	8.5	35	840	. .	. .	. .	820	74.6	329 32 20.9	. .	− 35.1	20 38 7.0	− 1.0
6	54 24	7.5	0.2	2.0	3.5	31	495	. .	. .	. .	490	74.6	305 31 9.3	. .	− 1 23.7	356 36 6.8	− 1.3
7	343 38	12.3	7.5	7.8	12.2	36	890	. .	. .	. .	870	74.6	16 18 38.6	. .	+ 17.5	67 25 17.3	− 2.0
8	291 6	13.6	8.2	9.5	11.7	37	050	040	. .	. .	. .	74.6	68 50 41.2	. .	+ 2 23.4	119 59 35.8	− 2.2
9	292 22	14.0	7.5	9.0	11.5	39	. .	190	. .	130	. .	74.6	67 35 13.9	. .	+ 2 24.2	118 43 59.3	− 2.0
10	48 16	13.3	5.1	7.4	8.3	35	775	. .	795	. .	800	74.6	311 40 20.6	. .	− 1 7.0	2 45 34.8	− 1.5
11	321 52	7.8	2.7	3.7	6.2	33	. .	800	. .	600	. .	74.6	38 1 11.9	. .	+ 46.8	89 8 19.9	− 2.9
12	343 16	11.5	5.3	6.0	9.6	36	. .	450	. .	425	. .	74.6	16 40 30.1	. .	+ 17.9	67 47 9.2	− 1.1
13	290 6	15.2	10.0	10.0	14.0	37	. .	. .	. .	050	970	74.6	69 50 43.2	. .	+ 2 41.8	120 59 46.2	− 0.3
14	353 12	13.3	6.5	8.9	10.7	32	. .	960	. .	950	. .	74.6	6 43 38.6	. .	+ 7.1	57 50 6.9	− 2.2
15	326 36	14.5	9.0	10.0	12.7	34	. .	810	. .	780	. .	74.6	33 20 8.3	. .	+ 39.4	84 27 8.9	− 2.7
16	354 34	8.7	2.5	4.2	6.2	32	680	. .	. .	. .	660	74.6	5 21 29.6	. .	+ 5.6	56 27 56.4	+ 5.3
17	349 22	8.7	3.2	3.8	6.3	33	. .	240	. .	210	. .	74.6	10 33 38.3	37.5	+ 11.2	61 40 10.7	− 1.3
18	359 42	9 20.5	16.3	18.3	21.8	35	. .	106	. .	088	. .	75.3	0 13 51.5	41.6	+ 0.2	51 20 12.9	− 0.8
19																	
20	331 22	10 23.8	17.9	19.7	23.1	36	. .	892	. .	864	. .	75.3	28 34 20.5	. .	+ 32.4	79 41 14.1	− 0.4
21	303 30	10 7.7	4.5	2.5	11.0	34	318	374	. .	. .	. .	75.3	56 25 56.1	47.4	+ 1 28.7	107 33 46.0	
22	302 58	13.6	. .	10.2	. .	35	. .	. .	. .	996	896	75.3	56 58 28.7	. .	+ 1 30.6	108 6 20.5	
23	330 20	5.1	1.9	28.3	6.3	32	. .	240	. .	246	. .	75.3	29 35 21.3	49.0	+ 33.4	80 42 15.9	+ 0.5
24	349 26	9 28.2	24.8	25.7	29.6	34	. .	240	. .	230	. .	75.3	10 29 46.1	. .	+ 10.9	61 36 18.2	+ 0.7
25	335 22	20.0	15.7	16.5	21.7	36	. .	830	. .	824	. .	75.3	24 34 17.1	. .	+ 26.9	75 41 5.2	+ 1.7
26	320 40	10 2.0	25.7	25.5	1.3	36	. .	874	. .	884	. .	75.3	39 16 27.9	. .	+ 49.1	90 23 38.2	− 0.3
27	319 46	3.2	26.0	26.7	1.7	34	. .	460	. .	420	. .	75.3	40 9 51.4	37.0	+ 50.7	91 17 3.3	+ 0.8
28	286 56	3.7	26.6	27.7	0.7	31	. .	328	. .	380	. .	75.3	72 59 4.2	. .	+ 3 14.1	124 8 39.5	+ 1.8
29	68 48	5.8	26.8	28.5	1.8	36	730	. .	. .	. .	708	75.3	291 8 27.4	. .	− 2 34.0	342 12 14.6	− 1.0
30	328 26	10 19.5	13.0	13.7	19.2	34	. .	218	. .	210	. .	75.3	31 30 4.9	. .	+ 36.8	82 37 2.9	+ 0.1
31	339 58	9 27.7	21.4	21.4	26.0	32	. .	148	. .	166	. .	75.3	19 57 11.2	. .	+ 21.8	71 3 54.2	+ 5.9
32	339 46	10 0.0	24.0	24.3	28.6	36	912	930	. .	. .	. .	75.3	20 7 53.5	. .	+ 22.0	71 14 36.7	+ 5.8
33	339 46	0.0	24.0	24.3	28.6	39	. .	. .	. .	258	320	75.3	20 11 3.5	. .	+ 22.1	71 17 46.8	+ 5.8
34	339 44	9 26.1	19.5	18.7	24.3	35	. .	. .	. .	800	764	75.3	20 12 5.2	. .	+ 22.1	71 18 48.5	+ 5.6
35	339 44	9 26.1	19.5	18.7	24.3	30	. .	. .	. .	560	568	75.3	20 10 45.3	37.2	+ 22.1	71 17 28.6	+ 5.6
36	48 16	10 4.5	26.8	27.9	0.9	36	314	332	340	354	354	75.3	311 40 21.2	. .	− 1 7.5	2 45 34.9	− 1.1
37	292 16	6.6	29.3	29.9	4.0	32	444	414	. .	. .	. .	75.3	67 39 23.0	. .	+ 2 25.3	118 48 9.5	+ 1.2
38																	
39	48 16	17.0	9.5	10.0	12.3	35	395	500	. .	500	433	75.5	311 40 21.0	33.3	− 1 8.5	2 45 33.7	− 1.7
40	348 4	12.9	6.5	6.0	9.0	35	. .	. .	. .	190	070	75.5	11 52 12.0	. .	+ 12.8	62 58 46.0	+ 6.3
41	43 40	7.4	29.5	0.0	2.0	32	930	. .	. .	. .	068	75.5	316 15 33.0	. .	− 58.4	7 20 55.8	+14.4
42	343 16	11.1	5.1	3.5	7.6	36	. .	580	. .	485	. .	75.5	16 40 31.2	. .	+ 18.3	67 47 10.7	+ 0.4
43	353 12	11.1	4.1	6.0	7.5	33	. .	100	. .	050	. .	75.5	6 43 38.7	. .	+ 7.2	57 50 7.1	− 1.7
44	326 36	14.0	8.2	8.0	13.0	34	. .	830	. .	790	. .	75.5	33 20 8.7	. .	+ 40.2	84 27 10.1	− 1.8
45	45 26	17.2	10.0	10.7	12.2	32	. .	585	. .	712	. .	75.5	314 29 37.6	. .	− 1 2.2	5 34 56.6	+11.1
46	343 46	13.0	9.0	8.5	12.4	34	740	. .	890	865	027	75.5	16 7 22.5	32.2	+ 17.7	67 14 1.4	
47	345 24	1.5	23.7	25.5	29.0	35	. .	825	. .	820	. .	75.5	14 32 10.9	. .	+ 15.9	65 38 48.0	− 0.8
48	347 38	12.9	5.9	6.6	10.3	32	. .	270	. .	293	. .	75.5	12 17 28.2	32.0	+ 13.4	63 24 2.8	− 1.1
49	329 36	7.0	1.5	2.8	5.0	38	. .	753	. .	712	. .	76.9	30 21 3.4	33.3	+ 35.6	81 28 0.2	+ 0.9
50	5 52	3.3	28.4	29.7	29.0	35	194	. .	176	. .	. .	76.9	354 4 5.4	34.4	− 6.3	45 10 20.3	+ 0.3

No.	Barom.	At. Ther.
	in.	°
2	30.54	27.5
3	30.02	41.5
17	30.07	39.0
18	30.27	39.0
21	30.21	44.2
23	30.21	46.0
27	30.14	42.0
35	30.14	41.0
37	30.34	35.0
45	30.36	33.0
48	30.37	32.7
4,	30.21	32.8
50	30.20	33.4

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
1	− 7.6	− 16 15.1	. .	− 16 22.7
2	− 7.5	+ 16 15.1	. .	+ 16 7.6
4	−11 11.0	+ 15 27.8	. .	+ 4 16.8
21	− 7.4	+ 16 17.2	. .	+ 16 9.8
22	− 7.5	− 16 17.2	. .	− 16 24.7
46	−15 8.7	+ 15 4.6	. .	− 0 4.1

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Feb. 4	1	Sun I, N. . . .	Sk.	31.8	34.4	36.0	42.2	44.5	46.6	53.0	54.8	57.4	11 44.52	+ 0.34	. .	+ 8.25	21 11 53.11	. .
	2	Sun II, S. . . .	Sk.	47.3	50.0	51.6	58.0	0.1	2.3	8.6	10.0	12.8	14 0.08	+ 0.34	. .	+ 8.25	21 14 8.67	. .
	3	α Aquarii. . . .	Sk.	58.8	0.2	4.3	6.4	8.4	10.5	12.5	16.5	18.0	59 8.40	+ 0.55	+ 8.24	+ 8.25	21 59 17.24	+ 0.08
	4	ζ Pegasi	Sk.	47.8	50.4	51.9	58.0	0.1	2.2	8.5	10.0	12.0	35 0.17	+ 0.70	+ 8.26	+ 8.26	22 35 9.13	+ 0.06
	5	α Pegasi	Sk.	5.8	8.5	10.0	16.4	18.5	20.7	26.9	28.6	31.2	58 18.51	+ 0.76	+ 8.33	+ 8.26	22 58 27.53	— 0.04
	6	Anonymous . .	F.	. .	. .	33.7	36.0	37.9	40.5	42.0	. .	. .	57 38.02	+ 0.98	. .	+ 8.10	5 57 47.10	— 0.66
	7	Anonymous . .	F.	57.0	0.0	1.5	. .	. .	. .	. .	. .	. .	3 10.11	+ 0.98	. .	+ 8.10	6 3 19.19	— 0.08
	8	Anonymous . .	F.	7.7	10.5	12.0	18.5	20.6	22.9	29.4	31.0	33.6	17 20.69	+ 0.98	. .	+ 8.11	6 17 29.78	— 0.75
	9	Anonymous . .	F.	49.0	51.6	53.2	59.7	1.7	3.8	10.5	12.0	14.6	18 1.79	+ 0.98	. .	+ 8.11	6 18 10.88	— 0.75
	10	Anonymous . .	F.	6.8	9.3	11.0	18.5	. .	23.2	30.5	32.7	35.4	22 20.92	+ 1.26	. .	+ 8.11	7 22 30.29	. .
	11	α Canis Minoris .	F.	21.9	24.4	26.0	32.0	34.2	36.3	42.5	44.0	46.5	32 34.20	+ 0.93	+ 8.06	+ 8.12	7 32 43.25	— 0.10
	12	Anonymous . .	F.	. .	. .	. .	. .	. .	. .	. .	14.0	16.7	36 2.18	+ 1.26	. .	+ 8.12	7 36 11.56	— 1.24
	13	Anonymous . .	F.	. .	. .	15.3	17.6	19.4	21.4	25.5	27.0	29.5	51 17.34	+ 0.76	. .	+ 8.12	7 51 26.22	. .
	14	λ Ursæ Minoris, S.P.	F.	41.0	20.0	2.0	. .	. .	. .	. .	. .	. .	49 45.57	−47.53	. .	+ 8.12	19 49 6.16	+ 0.99
	15	VIII, 5	F.	58.9	1.9	3.6	10.5	12.7	15.0	22.0	23.7	26.7	25 12.78	+ 0.28	. .	+ 8.13	8 25 21.19	— 1.08
	16	Anonymous . .	F.	7.8	10.3	12.0	16.0	18.4	20.4	. .	. .	. .	30 20.26	+ 0.54	. .	+ 8.13	8 30 28.93	. .
	17	Anonymous . .	F.	. .	. .	49.4	51.7	53.9	55.8	57.8	. .	. .	32 53.72	+ 0.50	. .	+ 8.13	8 33 2.35	— 1.00
	18	ϵ Hydræ	F.	46.0	48.4	50.0	56.0	58.2	0.2	6.4	7.9	10.6	39 58.19	+ 0.80	+ 8.22	+ 8.13	8 40 7.12	— 0.13
	19	ϵ Leonis	F.	20.4	23.1	24.7	31.6	33.8	36.0	42.8	44.4	47.2	38 33.78	+ 1.08	+ 8.15	+ 8.13	9 38 42.99	— 0.08
	20	γ^1 Leonis	F.	40.7	43.2	44.7	49.0	53.3	57.7	2.2	3.8	6.5	12 53.45	+ 1.01	+ 8.08	+ 8.14	10 13 2.60	+ 0.04
9	21	γ Aquilæ. . . .	E.	. .	. .	. .	. .	7.0	9 0	13.1	14.8	17.4	40 4.90	+ 0.65	+ 9.17	+ 9.13	19 40 14.68	— 0.01
	22	α Aquilæ. . . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. . .
	23	α Cygni	E.	38.0	41.6	43.8	52.4	55.4	58.2	6.7	9.0	12.6	36 55.30	+ 1.37	+ 9.28	+ 9.13	20 37 5.80	— 0.13
			E.															
10	24	Sun I, N. . . .	E.	27.0	29.8	31.3	37.7	39.8	41.9	48.2	49.9	52.4	35 39.78	+ 0.27	. .	+ 9.14	21 35 49.19	. .
	25	Sun II, S. . . .	E.	41.6	44.0	45.6	52.0	54.1	56.2	2.7	4.3	6.7	37 54.13	+ 0.27	. .	+ 9.14	21 38 3.54	. .
	26	α Pegasi	E.	5.0	7.6	9.2	15.5	17.7	19.7	26.0	27.7	30.4	58 17.64	+ 0.71	+ 9.24	+ 9.15	22 58 27.50	— 0.06
	27	α Andromedæ . .	E.	26.8	29.8	31.6	38.5	40.8	43.1	50.0	51.9	54.8	1 40.81	+ 0.96	+ 9.20	+ 9.16	0 1 50.93	— 0.11
	28	γ Pegasi	E.	21.0	23.6	25.3	31.6	33.6	35.7	42.0	43.6	46.2	6 33.62	+ 0.71	+ 9.27	+ 9.16	0 6 43.49	— 0.11
	29	ϵ Orionis. . . .	E.	. .	. .	35.7	37.9	40.0	42.0	44.1	. .	. .	29 39.94	+ 0.51	+ 9.23	+ 9.19	5 29 49.64	— 0.05
	30	ω Draconis, S. P. .	E.	. .	. .	43.6	38.2	32.2	26.5	20.9	. .	. .	37 32.28	− 2.02	. .	+ 9.19	17 37 39.45	— 0.17
	31	ψ^1 Draconis, S. P. .	E.	. .	. .	15.0	8.5	1.8	54.7	48.4	. .	. .	44 1.68	− 2.55	. .	+ 9.19	17 44 8.32	— 0.35
	32	α Orionis. . . .	E.	59.5	2.0	3.7	9.9	11.9	13.9	20.0	22.0	24.3	48 11.91	+ 0.64	+ 9.02	+ 9.19	5 48 21.74	+ 0.14
	33	δ Ursæ Minoris, S.P.	E.	. .	. .	. .	50.0	17.0	40.5	33.0	8.0	25.0	12 50.83	−15.61	. .	+ 9.20	18 12 44.42	— 0.56
	34	μ Geminorum . .	E.	. .	. .	6.5	8.7	11.0	13.2	15.5	. .	. .	15 10.98	+ 0.90	+ 9.09	+ 9.20	6 15 21.08	+ 0.07
	35	Anonymous . .	E.	9.6	11.2	15.5	19.9	28.0	24.3	28.4	30.2	32.6	17 19.85	+ 0.81	. .	+ 9.20	6 17 29.86	— 0.70
	36	Anonymous . .	E.	50.5	52.2	56.4	58.6	0.9	2.9	5.2	9.4	11.0	18 0.79	+ 0.81	. .	+ 9.20	6 18 10.80	— 0.71
	37	γ Geminorum (R.) .	E.	. .	. .	14.3	16.4	18.6	20.6	22.7	. .	. .	30 18.52	− 0.90	+ 9.16	+ 9.20	6 30 26.76	+ 0.01
	38	51 Cephei	E.	. .	. .	9.0	50.0	35.0	19.0	1.0	. .	. .	40 34.80	+20.20	. .	+ 9.20	6 41 4.20	— 0.02
	39	α^2 Geminorum . .	E.	9 7	12.7	14.6	21.8	24.2	26.7	33.9	35.9	38.8	26 24.26	+ 1.10	+ 9.26	+ 9.21	7 26 34.57	+ 0.19
	40	α Canis Minoris (R.)	E.	22.7	25.5	27.0	32.9	34.9	37.0	43.2	44.6	47.0	32 34.98	− 0.92	+ 9.13	+ 9.21	7 32 43.27	— 0.08
	41	β Geminorum (R.) .	E.	. .	. .	24.7	26.9	29.2	31.6	34.0	. .	. .	37 29.28	− 1.02	+ 9.09	+ 9.21	7 37 37.47	+ 0.09
	42	ϕ Geminorum . .	E.	24.2	27.0	29.0	35.7	38.0	40.5	47.2	49.0	51.9	45 38.06	+ 0.90	+ 9.13	+ 9.21	7 45 48.26	0.00
	43	Anonymous . .	E.	. .	. .	17.6	20.0	22.2	24.5	27.0	. .	. .	0 22.26	+ 1.02	. .	+ 9.21	8 0 32.49	— 1.24
	44	Anonymous . .	E.	19.9	22.6	24.7	32.4	35.0	37.2	44.8	16.7	49.6	14 34.77	− 0.00	. .	+ 9.21	8 14 43.89	— 1.17
	45	Anonymous . .	E.	3.6	6.4	8.3	14.0	16.6	18.8	24.6	26.4	28.9	25 16.40	+ 0.37	. .	+ 9.21	8 25 25.98	. .
	46	Anonymous . .	E.	. .	. .	48.6	50.5	52.8	55.0	57.0	. .	. .	32 52.78	+ 0.31	. .	+ 9.22	8 33 2.31	— 1.02
	47	Anonymous . .	E.	. .	. .	12.0	14.1	16.5	18.5	20.5	. .	. .	33 16.32	+ 0.32	. .	+ 9.22	8 33 25.86	— 1.02
	48	Uranus. . . .	E.	. .	. .	55.4	57.7	59.8	2.0	6.4	8.0	10.6	41 57.67	+ 0.83	. .	+ 9.22	8 42 7.72	. .
	49	Proserpina . .	E.	51.9	54.9	56.9	2.9	5.2	7.5	14.0	15.7	18.5	10 5.28	+ 0.90	. .	+ 9.22	9 10 15.40	. .
	50	Fides	E.	13.8	16.8	18.6	25.3	27.5	29.5	35.7	37.7	40.4	23 27.26	+ 0.84	. .	+ 9.22	9 23 37.32	. .

10. Observed for Minerva.
10, 13, 16, 45, 46, 47, 49, 50. Wire A used.
11. Micrometer-reading increased one revolution in reduction.
13. Observed for Arethusa.
16, 45. Obeserved for Artemis.
30, 31. Bisections at set C.
33. Bisections at wires C_6 and D_3.
44. Wire B used.

Number.	Circle Division	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	305 14	10 2.2	26.7	27.8	1.2	38	875	910	. .	. .	. .	76.9	54 43 0.3	. .	+ 1 25.4	105 50 46.9	
2	304 40	2.2	26.1	27.5	1.5	32	. .	. .	. .	912	940	76.9	55 15 30.3	35.0	+ 1 27.1	106 23 18.6	
3	320 8	7.2	3.5	3.0	6.0	37	. .	. .	. .	879	952	76.9	39 48 52.1	36.2	+ 50.3	90 56 3.6	+ 1.2
4	331 14	3.6	27.6	29.1	1.3	37	. .	978	. .	920	. .	76.9	28 42 47.8	37.2	+ 33.0	79 49 42.0	+ 1.7
5	335 34	4.5	28.6	29.1	2.5	33	. .	458	. .	468	. .	76.9	24 21 39.9	36.8	+ 27.3	75 28 28.4	+ 2.6
6	338 58	9 23.2	15.6	16.8	22.1	32	. .	484	. .	494	. .	78.3	20 57 14.6	. .	+ 23.8	72 3 59.6	+ 5.7
7	339 46	20.7	12.7	14.7	18.2	34	. .	. .	. .	526	522	78.3	20 9 43.4	. .	+ 22.8	71 16 27.4	+ 5.8
8	339 44	10 5.6	27.7	28.0	4.3	34	990	984	. .	. .	. .	78.3	20 12 4.6	. .	+ 22.9	71 18 48.7	+ 5.6
9	339 44	5.6	27.7	28.0	4.3	29	. .	. .	. .	696	706	78.3	20 10 44.4	. .	+ 22.8	71 17 28.4	+ 5.6
10	354 30	0.7	24.6	24.1	28.5	36	. .	. .	. .	554	600	78.3	5 24 52.2	24.2	+ 5.9	56 31 19.3	
11	326 36	9 27.4	19.7	22.2	25.8	35	798	792	. .	. .	. .	78.3	23 20 24.6	. .	+ 26.8	74 27 12.6	+ 0.5
12	354 34	10 7.9	0.7	2.4	6.0	32	. .	. .	. .	464	476	78.3	5 21 29.8	. .	+ 5.8	56 27 56.8	+ 6.0
13	325 28	11.9	4.5	4.7	10.3	40	. .	. .	. .	575	585	78.3	34 27 4.0	. .	+ 42.6	85 34 7.8	
14																	
15	293 40	8.8	1.8	3.2	8.5	34	500	496	. .	. .	. .	78.3	66 16 0.8	24.0	+ 2 20.6	117 24 42.6	+ 0.4
16	310 18	13.8	6.1	7.3	12.7	41	. .	. .	. .	428	430	78.3	49 37 19.0	. .	+ 1 13.0	100 44 53.2	− 3.3
17																	
18	327 56	9 28.2	19.5	20.8	26.6	35	. .	. .	. .	962	958	78.3	32 0 12.5	. .	+ 38.9	83 7 12.6	+ 1.1
19	345 24	9 16.6	9.6	11.2	16.0	36	. .	650	. .	556	. .	78.3	14 32 12.4	. .	+ 16.1	65 38 49.7	+ 0.9
20	341 32	10 2.2	25.6	26.0	0.4	37	364	384	. .	. .	. .	78.3	18 24 38.3	23.0	+ 20.7	69 31 20.2	− 0.6
21	331 22	9 24.6	18.4	20.2	23.3	38	. .	. .	. .	690	610	78.3	28 34 51.8	. .	+ 33.0	79 41 46.0	− 0.3
22	329 36	10 0.4	24.0	25.4	1.5	39	. .	065	. .	985	. .	78.3	30 21 3.4	. .	+ 35.4	81 28 0.0	− 0.3
23	5 52	9 24.8	19.2	20.0	22.9	35	. .	730	. .	720	. .	78.6	354 4 7.0	. .	− 6.4	45 10 21.8	− 0.2
24	307 6	10 5.3	28.8	29.8	4.2	34	900	850	. .	. .	. .	78.6	52 50 3.1	. .	+ 1 19.4	103 57 43.7	
25	306 34	2.4	24.7	26.3	1.5	36	. .	. .	. .	810	765	78.6	53 22 30.6	33.0	+ 1 21.0	104 30 12.8	
26	335 34	9 27.7	21.4	22.3	26.7	33	. .	. .	. .	725	685	78.6	24 21 39.1	. .	+ 27.1	75 28 27.4	+ 0.9
27	349 26	10 5.7	0.9	0.0	5.2	33	795	. .	760	. .	. .	78.6	10 29 48.3	. .	+ 11.0	61 36 20.5	+ 1.2
28	335 32	9 28.7	21.8	22.8	27.5	36	. .	195	. .	130	. .	78.6	24 24 17.0	38.0	+ 27.0	75 31 5.2	+ 0.5
29	319 46	25.5	19.3	20.0	23.8	34	. .	. .	. .	695	645	77.5	40 9 50.2	. .	+ 51.2	91 17 2.6	− 0.4
30	72 10	24.8	15.8	14.8	19.2	32	955	. .	. .	. .	975	77.5	287 45 20.2	. .	− 3 7.9	338 48 33.5	+ 2 2
31	68 48	10 8.3	29.8	2.2	5.0	36	160	. .	. .	. .	130	77.5	291 8 24.0	. .	− 2 36.2	342 12 9.0	− 3.4
32	328 26	1.4	25.0	26.3	0.3	35	. .	250	. .	155	. .	77.5	31 30 4.1	26.5	+ 37.3	82 37 2.6	− 0.7
33	54 24	0.0	23.6	25.0	27.0	31	. .	630	. .	695	. .	77.5	305 31 7.4	. .	− 1 25.2	350 36 3.4	− 1.0
34	343 38	11.0	3.4	4.5	7.8	36	. .	870	. .	840	. .	77.5	16 18 38.0	. .	+ 17.8	67 25 17.0	− 2.1
35	339 44	0.7	23.7	24.8	27.0	35	. .	. .	. .	190	170	77.5	20 12 2.6	. .	+ 22.4	71 18 46.2	+ 5.6
36	339 44	0.7	25.7	24.8	27.0	30	. .	. .	. .	015	005	77.5	20 10 43.4	. .	+ 22.4	71 17 27.0	+ 5.6
37	202 18	12.0	6.0	7.6	7.3	30	. .	. .	. .	720	800	77.5	157 37 6.2	. .	− 25.1	73 29 40.1	+ 2.7
38	48 16	4.3	25.5	26.9	29.6	36	070	. .	. .	. .	070	77.5	311 40 18.0	. .	− 1 8.4	2 45 30.8	− 1.8
39	353 12	0.3	22.7	25.1	27.2	33	. .	740	. .	690	. .	77.5	6 43 39.6	. .	+ 7.2	57 50 8.0	0.0
40	213 16	8.0	1.7	3.1	2.5	33	. .	780	. .	765	. .	77.5	146 39 47.7	. .	− 40.4	84 27 13.7	+ 1.0
41	190 30	7.2	1.3	2.3	1.4	35	. .	. .	. .	920	910	77.5	169 26 19.9	. .	− 11.4	61 40 12.7	+ 1.5
42	348 8	10.8	4.2	6.1	9.1	34	. .	030	. .	990	. .	77.5	11 47 55.3	. .	+ 12.8	62 54 29.3	− 1.8
43	350 0	9 28.5	21.5	23.0	25.4	34	. .	. .	. .	240	210	77.5	9 55 46.1	. .	+ 10.7	61 2 18.0	+ 4.5
44	285 26	10 3.2	25.3	25.5	0.2	32	. .	950	. .	870	. .	77.5	74 32 2.5	. .	+ 3 38.3	125 42 2.0	− 1.6
45	311 16	8.0	29.8	0.7	6.0	40	. .	120	. .	335	. .	77.5	48 38 53.3	. .	+ 1 9.6	99 46 24.1	
46	307 40	9 26.8	20.3	20.5	24.8	35	. .	. .	. .	610	520	77.5	52 13 31.5	. .	+ 1 19.0	103 21 11.7	− 0.6
47	307 40	26.8	20.3	20.5	24.8	35	. .	. .	. .	920	900	77.5	52 13 36.8	. .	+ 1 19.0	103 21 17.0	− 0.6
48	340 0	28.8	21.5	23.0	25.5	36	. .	. .	. .	780	765	77.5	19 56 25.1	. .	+ 22.0	71 3 8.5	
49	343 16	10 5.5	27.8	27.8	1.7	35	. .	140	. .	175	. .	77.5	16 37 32.9	21.5	+ 18.4	67 44 12.5	− 1.5
50	340 28	5.6	27.1	29.0	2.1	36	. .	820	. .	910	. .	77.5	19 25 59.3	. .	+ 21.7	70 32 42.2	− 2.0

No.	Barom.	At. Ther.
	in.	°
1	30.20	35.0
2	30.19	34.5
24	30.20	36.5
25	30.23	
48	30.32	28.0
49	30.32	27.0
50	29.94	31.0
51	29.89	36.0
52	29.81	30.5
53	29.80	25.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
1	− 7.3	+ 16 15.8	. .	− 16 8.5
2	− 7.4	− 16 15.8	. .	+ 16 23.2
24	− 7.1	− 16 14.5	. .	+ 16 7.4
25	− 7.2	+ 16 14.5	. .	− 16 21.7
48	− 0.2	. . .	. .	− 0.2

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Feb. 11	1	δ Ursæ Minoris, S. P.	S.	. .	. .	58.5	23.6	49.4	16.3	41.0	. .	. .	12 49.76	−13.89	. .	+ 9.34	18 12 45.21	+ 0.23
	2	γ Geminorum . .	S.	4.0	6.7	8.2	14.0	16.6	18.7	25.2	26.8	29.5	30 16.70	+ 0.70	+ 9.31	+ 9.35	6 30 26.75	+ 0.01
	3	51 Cephei . . .	S.	. .	. .	11.5	54.4	37.4	18.5	2.2	. .	. .	40 36.80	+18.04	. .	+ 9.35	6 41 4.19	+ 0.17
	4	Weisse (2) 67 . .	S.	0.2	3.7	5.9	14.6	17.4	20.2	28.9	31.0	34.5	5 17.38	+ 1.28	. .	+ 9.37	9 5 28.03	− 1.85
	5	Weisse (2) 503. .	S.	6.3	9.8	11.6	19.1	21.8	24.2	32.0	33.9	37.0	25 21.74	+ 1.09	. .	+ 9.37	9 25 32.20	− 1.64
	6	Weisse (2) 592. .	S.	. .	. .	20.2	22.9	25.4	28.0	30.8	. .	. .	29 25.46	+ 1.12	. .	+ 9.37	9 29 35.95	− 1.68
	7	Anonymous . .	S.	. .	9.5	11.4	18.7	21.0	23.6	31.1	32.9	. .	36 21.17	+ 1.02	. .	+ 9.37	9 36 31.56	− 1.57
	8	Bessels Zones 354	S.	57.3	0.3	2.2	9.5	11.9	14.3	21.4	23.3	26.4	43 11.84	+ 0.98	. .	+ 9.37	9 43 22.19	− 1.51
	9	α Leonis . . .	S.	20.9	22.4	26.5	28.5	30.7	32.8	35.0	39.1	40.6	1 30.72	+ 0.64	+ 9.41	+ 9.38	10 1 40.74	− 0.07
	10	Weisse 208 . .	S.	17.9	19.4	23.7	25.8	27.8	29.9	32.0	36.0	37.6	13 27.79	+ 0.63	. .	+ 9.38	10 13 37.80	− 1.14
	11	Anonymous . .	S.	. .	. .	. .	. .	. .	12.3	16.3	18.0	20.5	16 8.10	+ 0.60	. .	+ 9.38	10 16 18.08	− 1.12
	12	Amphitrite . .	S.	15.7	17.2	21.3	23.5	25.7	27.7	29.9	34.0	35.8	23 25.64	+ 0.68	. .	+ 9.38	10 23 35.70	. .
	13	Angelina . . .	S.	44.3	46.8	48.5	54.7	56.8	58.8	5.0	6.6	9.2	27 56.74	+ 0.59	. .	+ 9.38	10 28 6.71	. .
	14	γ Aquilæ . . .	F.	. .	. .	2.7	4.7	6.8	8.8	13.0	14.5	17.0	40 4.67	+ 0.55	+ 9.54	+ 9.51	19 40 14.73	0.00
	15	α Aquilæ . . .	F.	14.3	16.9	18.4	24.6	26.8	28.8	34.9	36.5	39.0	44 26.69	+ 0.52	+ 9.52	+ 9.51	19 44 36.72	+ 0.03
12	16	Sun I, S. . . .	F.	19.5	22.0	23.8	30.0	32.3	34.3	40.6	42.0	44.5	43 32.11	+ 0.14	. .	+ 9.53	21 43 41.78	. .
	17	Sun II, N. . . .	F.	33.5	36.2	37.9	44.0	46.0	48.2	54.9	56.3	58.7	45 46.19	+ 0.14	. .	+ 9.53	21 45 55.86	. .
	18	ε Orionis . . .	F.	27.4	30.0	31.5	37.7	39.8	41.8	47.9	49.5	51.9	29 39.72	+ 0.37	+ 9.56	+ 9.61	5 29 49.70	+ 0.04
	19	α Columbæ . . .	F.	41.8	44.8	46.5	54.0	56.6	58.9	6.3	8.0	11.3	34 56.47	− 0.25	+ 9.72	+ 9.61	5 35 5.83	− 0.15
	20	α Orionis . . .	F.	59.0	1.8	3.4	9.5	11.5	13.6	19.7	21.2	23.9	48 11.51	+ 0.51	+ 9.53	+ 9.61	5 48 21.63	+ 0.05
	21	Anonymous . .	F.	52.9	55.7	57.9	3.8	5.9	8.0	14.6	16.2	18.9	57 5.89	+ 0.72	. .	+ 9.61	5 57 16.22	− 0.58
	22	Anonymous . .	F.	25.2	28.0	29.6	38.4	40.5	. .	. .	. .	. .	1 38.27	+ 0.72	. .	+ 9.61	6 1 48.60	− 0.60
	23	Anonymous . .	F.	. .	. .	58.6	1.2	3.0	5.5	7.7	. .	. .	2 3.20	+ 0.72	. .	+ 9.61	6 2 13.53	− 0.61
	24	δ Ursæ Minoris, S. P.	F.	. .	. .	1.0	26.0	53.0	17.0	41.0	. .	. .	12 51.60	−16.06	. .	+ 9.62	18 12 45.16	− 0.04
15	25	δ Draconis . . .	Sk.	44.0	50.7	54.7	10.8	16.3	21.4	37.2	41.0	47.7	12 15.98	+ 1.26	. .	+10.60	19 12 27.84	− 0.38
	26	ζ Cygni	Sk.	. .	. .	18.6	21.0	23.3	25.8	30.5	32.1	35.0	7 20.98	+ 1.12	+10.52	+10.62	21 7 32.72	+ 0.11
16	27	Sun I, S. . . .	Sk.	54.2	56.7	58.4	4.8	6.8	8.9	15.0	16.7	19.4	59 6.77	+ 1.05	. .	+10.63	21 59 18.45	. .
	28	Sun II, N. . . .	Sk	7.0	9.7	11.4	17.5	19.6	21.7	28.0	29.6	32.4	1 19.66	+ 1.05	. .	+10.63	22 1 31.34	. .
	29	α Pegasi . . .	Sk	3.2	6.0	7.4	13.7	15.8	17.9	24.3	25.9	28.5	58 15.86	+ 1.10	+10.63	+10.64	22 58 27.60	+ 0.04
	30	α Andromedæ . .	Sk.	25.3	28.2	30.0	36.9	39.2	41.5	48.5	50.3	53.1	1 39.22	+ 1.12	+10.68	+10.65	0 1 50.99	− 0.01
	31	γ Pegasi	Sk.	19.0	21.8	23.3	29.7	31.8	34.0	40.1	41.7	44.3	6 31.74	+ 1.10	+10.72	+10.65	0 6 43.49	− 0.07
	32	δ Orionis . . .	Sk.	10.5	13.0	14.6	20.7	22.7	24.8	30.8	32.3	34.9	25 22.70	+ 1.16	+10.71	+10.70	5 25 34.56	− 0.04
	33	α Columbæ . . .	Sk.	39.0	42.2	43.9	51.5	53.8	56.3	3.9	5.7	8.8	34 53.90	+ 1.07	+10.80	+10.70	5 35 5.67	− 0.23
	34	α Orionis . . .	Sk.	. .	. .	5.5	7.6	9.6	11.7	13.8	. .	. .	48 9.64	+ 1.18	+10.68	+10.70	5 48 21.52	− 0.01
	35	Anonymous . .	Sk.	51.2	54.0	55.6	2.3	4.3	6.6	13.0	14.7	17.4	57 4.34	+ 1.20	. .	+10.71	5 57 16.25	− 0.53
	36	δ Ursæ Minoris, S. P.	Sk.	. .	. .	48.0	11.0	38.5	4.5	30.5	. .	. .	12 38.50	− 1.32	. .	+10.71	18 12 47.89	+ 1.33
	37	γ Geminorum . .	Sk.	2.0	4.6	6.2	12.7	14.7	16.8	23.3	24.8	27.5	30 14.73	+ 1.20	+10.73	+10.71	6 30 26.64	− 0.05
	38	51 Cephei . . .	Sk.	. .	. .	23.0	10.0	50.5	30.5	15.0	. .	. .	40 49.80	+ 4.18	. .	+10.71	6 41 2.69	− 0.11
	39	ε Canis Majoris. .	Sk.	15.2	18.4	20.1	27.2	29.4	31.7	38.8	40.6	43.5	53 29.43	+ 1.09	+10.82	+10.72	6 53 41.24	− 0.15
	40	VII, 1	Sk.	50.4	54.2	55.7	2.8	5.0	7.3	14.3	16.0	19.7	3 5.04	+ 1.10	. .	+10.72	7 3 17.86	− 0.87
	41	VII, 2	Sk.	. .	. .	12.8	15.2	17.7	20.1	22.6	. .	. .	10 17.68	+ 1.08	. .	+10.72	7 10 29.48	− 0.93
	42	α^2 Geminorum . .	Sk.	. .	. .	. .	22.8	25.2	27.7	32.4	34.1	37.2	26 22.76	+ 1.25	+10.57	+10.72	7 26 34.73	+ 0.39
	43	VII, 6	Sk.	54.6	56.7	1.8	4.2	6.9	9.4	12.0	17.1	19.0	33 6.86	+ 1.06	. .	+10.72	7 33 18.64	− 1.08
	44	B. A. C. 2585 . .	Sk	. .	. .	45.6	6.7	28.5	49.5	8.9	. .	. .	46 27.84	+ 2.65	. .	+10.72	7 46 41.21	−12.82
	45	Anonymous . .	Sk.	19.8	22.6	24.3	31.4	33.7	36.2	43.1	44.9	47.9	55 33.77	+ 1.24	. .	+10.73	7 55 45.74	− 1.21
	46	VIII, 2	Sk.	34.4	37.2	39.2	46.7	49.1	51.7	59.6	1.4	4.7	12 49.33	+ 1.06	. .	+10.73	8 13 1.12	− 1.12
	47	VIII, 5	Sk.	55.8	58.4	0.4	7.1	9.5	11.9	18.5	20.4	23.4	25 9.49	+ 1.11	. .	+10.73	8 25 26.33	− 1.05
	48	VIII, 11	Sk.	55.4	58.3	0.1	7.5	9.9	12.0	19.5	21.3	24.2	39 9.80	+ 1.08	. .	+10.73	8 39 21.61	− 1.10
	49	κ Cancri	Sk.	32.0	34.8	36.3	42.6	44.6	46.7	52.8	54.3	57.0	0 44.57	+ 1.19	+10.64	+10.74	9 0 56.50	+ 0.09
	50	α Hydræ	Sk.	0.6	3.2	4.7	10.9	13.0	14.9	21.3	22.8	25.3	21 12.97	+ 1.14	+10.67	+10.74	9 21 24.85	+ 0.04

11. Telescope-micrometer reading reduced for 41.937 rev.
11, 22. Wire A used.
41. Wire B used.
44. Bisections at set C.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	54 24	10.6	4.9	5.0	9.3	30	. .	910	860	900	. .	76.8	305 31 6.4	35.3	− 1 24.0	356 36 3.6	− 0.8
2	337 34	7.3	0.0	0.8	6.7	38	. .	005	. .	015	. .	76.8	22 22 51.9	. .	+ 24.8	73 29 37.9	+ 0.5
3	48 16	12.5	6.2	6.6	10.3	35	. .	454	. .	. .	. .	76.8	311 40 17.8	. .	− 1 7.4	2 45 31.6	− 0.8
4	5 22	5 4	0.7	29.9	4.5	30	. .	940	. .	860	. .	76.8	354 33 2.2	. .	− 5.8	45 39 17.6	+ 2.4
5	358 16	10.3 / 9.4	5.0 / 4.3	5.0 / 5.0	8.6 / 6.5	38	. .	. .	. .	. .	075	76.8	1 40 57.1	31.5	+ 1.8	52 47 20.1	+ 0.4
6	359 30	1.4	24.9	25.3	29.0	31	. .	353	. .	345	. .	76.8	0 25 4.0	. .	+ 0.4	51 31 25.6	+ 0.1
7	355 20	2.2	25.7	25.5	0.5	34	. .	. .	. .	000	956	76.8	4 36 0.9	. .	+ 4.9	55 42 27.0	− 0.6
8	353 2	6.0	0.7	0.0	5.2	37	. .	. .	. .	. .	640	76.8	6 54 46.2	30.0	+ 7.4	58 1 14.8	− 1.2
9	333 38	2.5	25.7	25.0	0.1	35	. .	. .	. .	810	870	76.8	26 18 13.7	. .	+ 30.0	77 25 4.9	− 0.5
10	332 34	9.3	4.7	3.9	7.8	38	. .	822	. .	806	. .	76.8	27 23 6.9	. .	+ 31.5	78 29 59.6	− 2.7
11	330 42	5.2	29.5	28.6	5.0	39	. .	. .	. .	. .	937	76.8	29 13 17.6	. .	+ 34.0	80 20 12.8	− 2.7
12	336 6	8.5	2.5	2.2	7.0	37	. .	. .	. .	190	193	76.8	23 50 41.1	. .	+ 26.9	74 57 29.2	− 2.3
13	329 52	4.1	28.7	28.4	3.0	37	. .	. .	. .	210	260	76.8	30 4 37.7	. .	+ 35.2	81 11 34.1	− 3.2
14	331 22	9 25.4	16.9	18.0	23.4	38	. .	. .	. .	890	870	76.1	28 34 52.1	. .	+ 32.2	79 41 45.5	− 1.1
15	329 36	0.9	21.9	23.0	1.0	39	. .	044	. .	044	. .	76.1	30 21 0.0	42.9	+ 34.7	81 27 55.9	− 4.7
16	307 14	29.8	23.8	23.3	26.8	38	868	846	. .	. .	. .	76.1	52 42 55.4	. .	+ 1 17.4	103 50 34.0	
17	307 46	0.3	25.4	24.4	27.1	36	. .	. .	. .	988	962	76.1	52 10 29.0	45.0	+ 1 15.9	103 18 6.1	
18	319 46	5.5	29.3	28.4	5.9	34	. .	020	. .	012	. .	77.2	40 9 49.7	. .	+ 50.8	91 17 1.7	− 1.4
19	286 56	10.2	2.7	3.4	8.0	30	. .	. .	. .	880	860	77.2	72 59 5.3	35.0	+ 3 14.2	124 8 40.7	+ 0.7
20	328 26	3.4	25.7	26.7	3.3	35	. .	150	. .	158	. .	77.2	31 30 4.7	. .	+ 36.9	82 37 2.8	− 0.6
21	339 58	2.2	24.0	25.6	0.4	31	936	928	. .	. .	. .	77.2	19 57 13.4	. .	+ 21.9	71 3 56.5	+ 6.0
22	339 46	2.0	23.6	23.4	28.7	36	978	992	. .	. .	. .	77.2	20 7 56.6	. .	+ 22.1	71 14 39.9	+ 5.9
23	339 46	2.0	23.6	23.4	28.7	39	. .	. .	. .	052	032	77.2	20 11 1.8	. .	+ 22.1	71 17 45.1	+ 5.9
24	54 24	7.2	29.2	1.2	3.6	31	212	200	188	175	175	77.2	305 31 6.9	35.1	− 1 24.2	356 36 3.9	− 0.3
25	28 28	10 20.5	16.5	15.4	16.5	34	. .	193	. .	240	. .	72.9	331 28 4.1	40.5	− 32.0	22 33 53.3	− 4.5
26	350 46	15.9	13.0	11.0	14.2	38	. .	. .	. .	218	188	72.9	9 11 1.3	50.2	+ 9.3	60 17 31.8	− 1.2
27	308 36	9 15.4	14.5	11.7	14.8	38	225	215	. .	. .	. .	72.9	51 21 0.6	56.0	+ 1 11.2	102 28 33.0	
28	309 8	10 4.0	29.6	28.4	1.3	37	. .	. .	. .	590	610	72.9	50 48 39.4	. .	+ 1 9.8	101 56 10.4	
29	335 34	16.5	14.9	12.9	16.5	32	. .	025	. .	962	. .	72.9	24 21 42.7	58.2	+ 25.7	75 28 29.6	+ 2.3
30	349 26	12.6	10.5	8.5	11.0	33	. .	689	. .	676	. .	72.9	10 29 48.8	. .	+ 10.5	61 36 20.5	+ 0.3
31	335 32	10 0.5	27.0	26.5	28.8	36	. .	. .	. .	450	. .	72.9	24 24 18.9	58.5	+ 25.7	75 31 5.8	+ 0.5
32	328 40	11.2	6.8	5.5	10.4	36	604	600	. .	. .	. .	73.1	39 16 31.0	. .	+ 47.8	90 23 40.0	+ 0.4
33	289 56	10 19.5	15.0	14.0	15.7	30	. .	958	. .	951	. .	73.1	72 59 12.2	44.5	+ 3 9.0	124 8 42.4	+ 1.9
34	328 26	15.5	13.0	11.4	14.2	34	. .	. .	. .	704	660	73.1	31 30 7.4	. .	+ 35.9	82 37 4.5	+ 1.0
35	339 58	19.7	16.0	14.4	16.6	30	. .	. .	. .	935	940	73.1	19 57 13.4	. .	+ 21.3	71 3 55.9	+ 6.0
36	54 24	14.6	9.6	8.8	10.6	30	. .	. .	. .	. .	788	73.1	305 31 4.6	44.2	− 1 22.0	356 36 3.8	+ 1.0
37	337 34	17.1	13.2	11.9	15.4	37	. .	. .	. .	668	599	73.1	22 22 53.6	. .	+ 24.2	73 29 39.0	+ 1.6
38	48 16	16.9	11.0	10.8	11.9	35	. .	324	304	295	. .	73.1	311 40 15.7	. .	− 1 6.0	2 45 30.9	− 0.1
39	292 16	19.6	14.4	14.0	17.3	32	. .	082	. .	038	. .	73.1	67 39 29.5	. .	+ 2 22.3	118 48 13.0	+ 1.1
40	294 52	10.2	4.8	4.1	8.1	31	. .	870	. .	768	. .	73.1	65 3 16.3	. .	+ 2 6.1	116 11 43.6	− 4.3
41	290 38	16.9	11.6	11.9	15.0	28	. .	887	. .	950	. .	73.1	69 19 12.3	. .	+ 2 35.2	120 28 8.7	− 4.7
42	353 12	10.8	6.0	6.5	7.9	33	. .	230	. .	195	. .	73.1	6 43 39.0	. .	+ 7.0	57 50 7.2	− 0.2
43	283 22	11.8	6.1	7.6	10.2	32	310	305	. .	. .	. .	73.1	76 33 25.3	. .	+ 4 3.0	127 43 49.5	− 4.6
44	45 26	16.0	10.6	9.9	11.4	32	473	. .	576	. .	570	73.1	314 29 32.6	. .	− 1 0.3	5 34 53.5	+ 15.8
45	350 10	11.1	5.6	5.5	7.9	39	. .	100	. .	080	. .	73.1	9 47 8.7	. .	+ 10.2	60 53 40.1	+ 5.2
46	285 26	17.3	11.9	9.9	13.6	37	. .	408	. .	432	. .	73.1	74 30 48.3	37.6	+ 3 31.4	125 40 40.9	− 3.2
47	293 40	4.6	29.9	28.5	1.6	35	. .	592	. .	490	. .	73.1	66 16 7.6	. .	+ 2 14.5	117 24 43.3	− 2.5
48	289 32	11.3	6.9	5.9	8.6	38	. .	031	. .	015	. .	73.1	70 24 52.6	. .	+ 2 45.6	121 33 59.4	− 2.3
49	332 14	9.1	3.9	3.0	3.6	37	. .	398	. .	365	. .	73.1	27 42 39.8	37.9	+ 31.2	78 49 32.2	− 0.9
50	312 56	15.0	10.4	8.7	13.4	31	. .	970	. .	979	. .	73.1	46 59 23.7	. .	+ 1 3.5	98 6 48.4	− 1.3

	Barom.	At. Ther.
	in.	°
	29.99	40.0
	30.05	35.0
	30.07	39.5
	30.06	35.0
	30.05	38.0
	29.70	43.0
	29.72	48.0
	29.69	51.2
	29.69	53.6
	29.68	59.7
	29.79	46.5
	29.81	45.4
	29.84	41.0
	29.84	40.5

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
16	− 7.1	− 16 13.9	. .	− 16 21.0
17	− 7.0	+ 16 13.9	. .	+ 16 6.9
27	− 7.0	− 16 11.2	. .	− 16 18.2
28	− 6.9	+ 16 11.2	. .	+ 16 4.3

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Feb. 16	1	IX, 2^1	Sk.	. .	. .	50.2	52.3	54.7	57.0	59.3	. .	. .	23 54.70	+ 1.10	. .	+10.74	9 24 6.54	— 1.07
	2	IX, 2^2	Sk.	. .	. .	3.9	6.0	8.1	10.5	12.8	. .	. .	24 8.26	+ 1.10	. .	+10.74	9 24 20.10	— 1.07
	3	δ Aquilæ	E.	46.0	47.7	51.7	53 8	55.8	57.8	59.9	4.0	5.6	18 55.81	+ 1.08	+10.61	+10.62	19 19 7.51	+ 0.06
	4	γ Aquilæ	E.	. .	. .	59.0	1.0	3.1	5.1	7.2	. .	. .	40 3.08	+ 1.10	+10.69	+10.62	19 40 14.80	— 0.04
	5	α Aquilæ	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. . .		. .
	6	α Cygni	E.	36.7	40.5	42.7	48.4	54.0	0.0	5.7	7.7	11.4	36 54.12	+ 1.24	+10.70	+10.63	20 37 5.99	— 0.05
	7	ζ Cygni	E.	6.7	9.6	11.4	18.4	20.8	23.2	30.3	32.0	34.9	7 20.81	+ 1.17	+10.65	+10.64	21 7 32.62	0.00
17	8	Sun I, N.	E.	48.8	50.3	54.5	56.5	58.6	0.7	2.7	7.0	8.5	2 58.62	+ 1.03	. .	+10.65	22 3 10.60	. .
	9	Sun II, S.	E.	1.7	3.2	7.6	9.5	11.5	13.7	15.6	20.2	21.6	5 11.62	+ 1.03	. .	+10.65	22 5 23.30	. .
	10	Mercury I, C.	E.	25.3	27.9	29.4	35.4	37.6	39.7	45.9	47.5	50.0	48 37.63	+ 1.04	. .	+10.65	22 48 49.32	+ 0.18
	11	α Pegasi	E.	3.0	5.7	7.3	13.6	15.7	18.0	24.2	25.7	28.5	58 15.74	+ 1.11	+10.74	+10.65	22 58 27.50	— 0.06
	12	α Andromedæ	E.	. .	. .	. .	. .	. .	. .	. .	. .	53.0	1 39.03	+ 1.16	—10.82	+10.65	0 1 50.84	— 0.15
	13	γ Pegasi	E.	19.0	21.8	23.4	29.6	31.9	33.9	40.0	41.9	44.4	6 31.77	+ 1.11	+10.68	+10.66	0 6 43.54	— 0.02
	14	α Orionis	E.	57.5	0.0	1.7	7.6	9.9	12.0	18.0	19.6	22.2	48 9.83	+ 1.15	+10.51	+10.71	5 48 21.69	+ 0.17
	15	Anonymous	E.	23.9	26.6	28.1	34.7	36.5	38.9	45.6	47.3	49.7	1 36.81	+ 1.20	. .	+10.71	6 1 48.71	— 0.55
	16	Anonymous	E.	. .	. .	57.4	59.6	1.8	4.0	6.1	. .	. .	2 1.78	+ 1.20	. .	+10.71	6 2 13.69	— 0.55
	17	δ Ursæ Minoris, S. P.	E.	. .	47.0	12.0	38.0	4.0	30.0	20.5	54.5	11.5	12 38.20	— 2.90	. .	+10.72	18 12 46.02	— 0.54
	18	μ Geminorum	E.	55.8	58.5	0.1	6.7	9.0	11.1	17.7	19.5	22.3	15 8.97	+ 1.21	+10.71	+10.72	6 15 20.90	— 0.03
	19	γ Geminorum	E.	2.0	4.8	6.2	12.6	14.8	17.0	23.4	25.0	27.7	30 14.83	+ 1.19	+10.63	+10.72	6 30 26.74	+ 0.06
	20	51 Cephei	E.	. .	. .	21.0	2.5	45.0	26.5	11.5	. .	. .	40 45.30	+ 5.99	. .	+10.72	6 41 2.01	— 0.46
	21	B. A. C. 2326	E.	. .	. .	47.8	3.0	20.0	36.5	52.0	. .	. .	4 19.86	+ 2.97	. .	+10.72	7 4 33.55	— 7.88
	22	VII, 2	E.	3.6	6.8	8.4	15.5	17.8	20.2	27.4	29.1	32.0	10 17.87	+ 1.02	. .	+10.73	7 10 29.62	— 0.93
	23	VII, 4	E.	28.5	31.4	33.3	40.2	42.7	44.9	52.2	54.0	57.0	13 42.69	+ 1.01	. .	+10.73	7 13 54.43	— 0.94
	24	a^2 Geminorum	E.	8.0	11.2	13.0	20.3	22.6	25.0	32.3	34.0	37.0	26 22.60	+ 1.26	+10.72	+10.73	7 26 34.56	+ 0.25
	25	α Canis Minoris	E.	19.0	21.6	23.1	29.2	31.3	33.4	39.5	41.1	43.7	32 31.32	+ 1.15	+10.68	+10.73	7 32 43.20	— 0.11
	26	VII, 8	E.	20.5	23.2	25.0	32.0	34.6	36.7	43.9	45.6	48.5	38 34.44	+ 1.02	. .	+10.73	7 38 46.16	— 0.98
	27	Anonymous	E.	6.6	9.4	11.0	18.0	20.4	22.8	29.8	31.6	34.6	0 20.47	+ 1.24	. .	+10.73	8 0 32.44	— 1.23
	28	Uranus I, C.	E.	32.6	35.2	36.8	. .	. .	. .	54.2	55.8	58.4	40 45.50	+ 1.20	. .	+10.74	8 40 57.44	. .
	29	Uranus II	E.	. .	. .	41.4	43.6	45.8	47.9	50.0	. .	. .	40 45.74	+ 1.20	. .	+10.74	8 40 57.68	. .
	30	κ Cancri	E.	32.0	34.6	36.2	42.4	44.5	46.5	52.9	54.4	57.0	0 44.50	+ 1.17	+10.74	+10.74	9 0 56.41	— 0.01
	31	Proserpine	E.	18.0	20.8	22.5	29.0	31.4	33.6	40.0	41.8	44.5	3 31.29	+ 1.21	. .	+10.74	9 3 43.24	. .
	32	α Hydræ	E.	0.5	3.2	4.7	10.8	12.9	15.0	21.2	22.8	25.4	21 12.94	+ 1.10	+10.75	+10.75	9 21 24.76	— 0.03
	33	Bonn. VI+39°, 2260	E.	. .	. .	39.4	42.0	44.9	47.0	50.0	. .	. .	25 44.78	+ 1.30	. .	+10.75	9 25 56.83	— 1.75
18	34	δ Ursæ Minoris, S. P.	F.	. .	. .	52.0	. .	43.0	8.0	. .	. .	. .	12 42.77	— 7.14	. .	+11.01	18 12 46.64	— 0.56
	35	51 Cephei	F.	. .	. .	16.0	58.0	41.0	21.0	6.0	. .	. .	40 40.40	+10.86	. .	+11.01	6 41 2.27	+ 0.51
	36	ε Canis Majoris	F.	15.2	18.1	20.0	27.0	29.4	31.8	38.7	40.4	43.4	53 29.33	+ 0.78	+11.21	+11.02	6 53 41.13	— 0.24
	37	δ Canis Majoris	F.	51.4	54.3	55.9	2.9	5.9	7.5	14.3	15.9	18.8	3 5.11	+ 0.80	+11.04	+11.02	7 3 16.93	— 0.07
	38	VII, 2	F.	3.4	6.4	8.0	15.2	17.6	20.0	27.2	28.9	31.8	10 17.61	+ 0.76	. .	+11.02	7 10 29.39	— 0.91
	39	a^2 Geminorum	F.	7.9	10.9	12.7	19.9	22.3	24.7	32.0	33.9	36.8	26 22.34	+ 1.27	+10.96	+11.03	7 26 34.64	+ 0.31
	40	α Canis Minoris	F.	18.8	21.5	22.9	29.0	31.2	33.2	39.4	40.9	43.4	32 31.14	+ 1.03	+10.98	+11.03	7 32 43.20	— 0.11
	41	VII, 7	F.	0.2	3.0	4.7	11.6	14.0	16.1	23.1	24.9	27.9	35 13.94	+ 0.78	. .	+11.03	7 35 25.75	— 0.06
	42	B. A. C. 2585	F.	44.4	59.5	41.7	2.5	23.5	44.0	6.3	47.7	3.2	46 23.64	+ 4.62	. .	+11.03	7 46 39.29	—12.06
	43	Anonymous	F.	19.5	22.6	24.2	31.0	33.5	35.8	42.9	44.5	17.5	55 33.50	+ 1.24	. .	+11.03	7 55 45.77	— 1.21
	44	Anonymous	F.	6.0	9.1	10.8	17.9	20.2	22.5	29.5	31.2	34.2	0 20.16	+ 1.24	. .	+11.03	8 0 32.43	— 1.23
	45	VIII, 8	F.	20.7	22.5	27.4	29.8	32.0	34.5	37.0	41.9	43.8	30 32.18	+ 0.74	. .	+11.03	8 30 43.95	— 1.10
	46	Uranus I, S.	F.	22.7	25.4	26.9	. .	. .	. .	44.0	45.7	48.5	40 35.53	+ 1.14	. .	+11.03	8 40 47.70	. .
	47	Uranus II, N.	F.	. .	. .	31.5	33.7	35.8	38.0	40.2	. .	. .	40 35.84	+ 1.14	. .	+11.03	8 40 48.01	. .
	48	κ Cancri	F.	32.0	34.4	36.0	42.2	44.3	46.3	52.7	54.2	56.9	0 44.33	+ 1.08	+11.00	+11.04	9 0 56.45	+ 0.03
	49	Anonymous	F.	17.8	20.6	22.3	28.9	31.1	33.2	40.0	41.6	44.3	2 31.10	+ 1.18	. .	+11.04	9 2 43.32	. .

15, 31. Wire A used.
15. Telescope micrometer reading increased one revolution in reduction.
17. Bisections at wires C_6 and D_3.
21, 42. Bisections at set C.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	295 2	11.6	6.0	5.7	9.7	35	. .	. .	. .	. .	067	73.1	64 54 7.7	. .	+ 2 5.8	116 2 34.7	− 1.4
2	295 2	11.6	6.0	5.7	9.7	34	. .	. .	. .	. .	119	73.1	64 53 53.2	39.5	+ 2 5.8	116 2 20.2	− 1.4
3	323 56	10 9.8	5.4	6.0	9.5	39	. .	. .	. .	275	250	73.7	36 1 12.2	34.0	+ 43.9	87 8 17.3	− 1.5
4	331 22	4.5	29.5	29.7	2.0	38	. .	350	. .	300	. .	73.7	28 34 51.3	. .	+ 32.9	79 31 45.4	− 1.9
5	329 36	8.9	4.4	4.9	9.3	38	. .	770	. .	715	. .	73.7	30 21 3.1	. .	+ 35.3	81 27 59.6	− 1.6
6	5 52	6.7	1.5	2.3	4.7	35	. .	300	. .	220	. .	73.7	354 4 7.0	. .	− 6.3	45 10 21.9	− 2.0
7	350 46	12.7	9.5	8.3	12.0	38	. .	440	. .	360	. .	73.7	9 11 1.8	. .	+ 9.7	60 17 32.7	− 0.5
8	309 28	9 24.3	21.5	20.7	27.1	34	135	030	. .	. .	. .	73.7	50 27 37.4	. .	+ 1 12.5	101 35 11.1	
9	308 56	22.3	18.7	19.0	23.2	35	. .	. .	. .	560	475	73.7	51 59 58.3	38.0	+ 1 13.9	102 7 36.1	
10	312 26	10 8.8	4.5	4.5	9.3	32	. .	115	. .	045	. .	73.7	47 29 20.9	. .	+ 1 5.4	98 36 47.5	
11	335 34	7.6	2.8	3.3	7.1	33	. .	400	. .	310	. .	73.7	24 21 39.0	. .	+ 27.2	75 28 27.4	0.0
12	349 26	10.5	7.5	6.8	9.7	33	. .	. .	. .	670	650	73.7	10 29 47.7	. .	+ 11.2	61 36 20.1	− 0.3
13	335 32	7.8	2.7	4.2	7.2	35	. .	. .	. .	845	820	73.7	24 24 17.6	. .	+ 27.3	75 31 6.1	+ 0.7
14	328 26	11.9	6.6	7.2	9.8	34	. .	685	. .	660	. .	74.6	31 30 3.7	30.0	+ 37.4	82 37 2.3	− 1.2
15	339 46	14.5	9.2	9.1	11.1	35	040	900	. .	. .	. .	74.6	20 7 52.5	. .	+ 22.4	71 14 36.1	+ 5.9
16	339 46	14.5	9.2	9.1	11.1	38	. .	. .	. .	240	230	74.6	20 11 0.9	. .	+ 22.4	71 17 44.5	+ 5.9
17	54 24	3.3	27.0	28.0	29.0	31	. .	. .	. .	500	570	74.6	305 31 5.4	. .	− 1 25.3	356 36 1.3	− 1.1
18	343 38	16.4	10.3	9.3	13.1	36	. .	770	. .	730	. .	74.6	16 18 39.0	. .	+ 17.8	67 25 18.0	− 0.8
19	337 34	8.7	3.5	3.2	6.5	37	. .	945	. .	925	. .	74.6	22 22 50.3	. .	+ 25.1	73 29 36.6	− 0.8
20	48 16	10.7	2.1	4.8	4.5	35	710	. .	770	. .	755	74.6	311 40 16.8	. .	− 1 8.5	2 45 29.5	− 0.7
21	43 40	3.0	26.3	27.8	28.3	33	020	. .	. .	. .	970	74.6	316 15 27.9	. .	− 58.4	7 20 50.7	+19.0
22	299 38	13.0	6.7	7.0	9.3	38	. .	525	. .	440	. .	74.6	69 19 1.9	. .	+ 2 40.6	120 28 3.7	− 4.9
23	299 6	13.8	10.2	11.0	13.3	37	. .	. .	. .	140	120	74.6	69 50 44.5	. .	+ 2 45.1	120 59 50.8	− 4.8
24	353 12	5.7	29.8	1.2	2.0	33	. .	. .	. .	265	245	74.6	6 43 36.0	. .	+ 7.2	57 50 4.4	− 3.0
25	326 36	11.7	4.5	6.6	9.0	35	. .	095	. .	065	. .	74.6	33 20 9.0	. .	+ 40.2	84 27 10.4	− 2.6
26	292 26	13.5	6.6	8.5	11.0	36	. .	395	. .	330	. .	74.6	67 30 30.4	. .	+ 2 26.8	118 39 18.4	− 3.9
27																	
28	340 4	1.3	25.0	25.8	28.3	35	. .	310	. .	300	. .	74.6	19 52 2.2	. .	+ 22.1	70 58 45.5	
29	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .		28.0			
30	332 14	8.0	2.0	3.1	5.0	37	. .	210	. .	140	. .	74.6	27 42 37.7	. .	+ 32.2	78 49 31.1	− 2.1
31	343 40	1.0	25.2	25.7	27.0	37	. .	295	. .	245	. .	74.6	16 13 58.8	. .	+ 17.8	67 20 37.8	− 1.4
32	312 56	10.8	5.0	6.0	9.5	31	. .	960	. .	910	. .	74.6	46 59 20.6	. .	+ 1 5.6	98 6 47.4	− 2.4
33	0 24	7.4	1.4	3.3	3.2	37	. .	. .	. .	185	125	74.6	359 32 37.4	. .	− 0.5	50 38 58.1	+ 1.3
34	54 24	0.8	23.5	25.3	27.2	31	740	. .	746	. .	. .	75.6	305 31 7.6	. .	− 1 25.9	356 36 2.9	+ 0.3
35	48 16	2.2	23.9	25.5	29.0	36	158	154	168	178	176	75.6	311 40 16.4	28.8	− 1 9.0	2 45 28.6	− 1.7
36	292 16	2.5	24.4	27.0	0.1	32	. .	560	. .	558	. .	75.6	67 39 21.8	. .	+ 2 28.6	118 48 11.6	− 0.6
37	294 52	9 19.0	13.1	14.0	18.0	32	. .	690	. .	690	. .	75.6	65 3 11.3	. .	+ 2 11.5	116 11 44.0	+ 0.6
38	299 38	10 8.5	1.4	2.4	5.6	38	. .	850	. .	844	. .	75.6	69 19 4.0	. .	+ 2 41.7	120 28 6.9	− 5.0
39	353 12	12.2	4.6	6.2	9.7	32	. .	990	. .	908	. .	75.6	6 43 37.8	. .	+ 7.3	57 50 6.3	− 1.0
40	326 36	9 26.7	20.1	21.5	24.1	35	982	992	. .	. .	. .	75.6	33 20 8.7	. .	+ 40.5	84 27 10.4	− 2.6
41	293 10	10 10.2	3.0	3.9	8.0	38	. .	764	. .	704	. .	75.6	66 47 4.1	. .	+ 2 22.6	117 55 47.9	− 4.1
42	45 26	9.2	2.1	3.5	5.6	32	800	. .	790	. .	810	75.6	314 29 32.3	. .	− 1 2.6	5 34 50.9	+16.4
43	350 10	9 26.6	20.4	21.5	25.1	39	. .	750	. .	774	. .	75.6	9 47 7.3	. .	+ 10.6	60 53 39.1	+ 5.4
44	350 0	25.6	18.3	21.0	23.0	34	. .	486	. .	490	. .	75.6	9 55 45.2	28.2	+ 10.8	61 2 17.2	+ 5.1
45	288 24	10 2.9	27.0	27.7	1.3	39	. .	. .	. .	170	162	75.6	71 33 4.4	. .	+ 3 3.1	122 42 28.7	− 3.1
46	340 4	5.6	29.1	0.0	2.8	32	872	. .	. .	. .	802	75.6	19 51 29.8	. .	+ 22.3	70 58 13.3	
47	340 4	5.6	29.1	0.0	2.8	32	. .	662	. .	570	. .	75.6	19 51 26.3	. .	+ 22.3	70 58 9.8	
48	332 14	3.8	27.2	28.7	1.4	37	468	476	. .	. .	. .	75.6	27 42 38.7	. .	+ 32.5	78 49 32.4	− 0.8
49																	

No.	Barom.	At. Ther.
	in.	°
2	29.86	40.6
3	30.07	33.0
	30.09	37.0
44	30.11	35.0
47	30.12	32.0
25	30.12	32.0
35	30.28	30.0
48	30.27	29.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
8	− 6.8	+ 16 11.1	. .	+ 16 4.3
9	− 6 9	− 16 11.1	. .	− 16 18.0
10	− 5.3	. . .	− 0.1	− 5.4
28	− 0.2	. . .	. .	− 0.2
46	− 0.2	− 1.8	. .	− 2.0
47	− 0.2	+ 1.8	. .	+ 1.6

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Feb. 18	1	Fides	F.	39.4	42.2	44.0	50.4	52.5	54.6	1.3	3.0	5.9	15 52.59	+ 1.15	. .	+11.04	9 16 4.78	. .
	2	Bonn VI +39°, 2260	F.	28.7	32.0	34.0	42.0	44.6	47.1	54.9	57.2	0.9	25 44.60	+ 1.35	. .	+11.04	9 25 56.99	− 1.76
	3	Weisse (2) 584.	F.	. .	. .	. .	. .	. .	11.7	16.7	18.5	22.0	29 6.33	+ 1.34	. .	+11.04	9 29 18.71	− 1.73
	4	Anonymous	F.	4.4	7.8	9.7	16.9	19.4	21.9	29.4	31.2	34.3	36 19.44	+ 1.20	. .	+11.04	9 36 31.77	− 1.62
	5	Bessel's Zones 354	F.	55.6	58.7	0.5	7.7	10.0	12.6	19.7	21.5	24.6	43 10.10	+ 1.28	. .	+11.04	9 43 22.42	− 1.60
	6	IX, 15	F.	37.2	40.4	42.2	50.1	52.6	55.3	2.9	4.9	8.0	55 52.62	+ 0.69	. .	+11.04	9 56 4.35	− 1.15
	7	IX, 16	F.	30.8	33.8	35.8	43.2	45.7	48.0	55.6	57.3	0.4	59 45.62	+ 0.72	. .	+11.04	9 59 57.38	− 1.12
	8	γ^1 Leonis	F.	37.4	40.3	41.8	48.4	50.6	52.8	59.2	1.0	3.7	12 50.58	+ 1.16	+10.98	+11.04	10 13 2.78	+ 0.04
	9	Schjellerup 3815	F.	3.6	6.0	7.5	13.7	15.8	17.9	24.0	25.5	28.2	18 15.80	+ 1.04	. .	+11.04	10 18 27.88	− 1.16
	10	Anonymous	F.	. .	. .	46.9	49.0	51.0	53.0	55.1	. .	. .	21 51.00	+ 1.06	. .	+11.04	10 22 3.10	
	11	Lamont 923	F.	. .	. .	. .	. .	. .	. .	1.6	3.0	4.5	28 53.28	+ 0.96	. .	+11.04	10 29 5.28	− 1.07
	12	Anonymous	F.	33.8	36.3	42.0	44.9	46.0	48.0	50.0	55.9	58.5	36 46.06	+ 0.93	. .	+11.05	10 36 58.04	− 1.04
	13	Leto	F.	42.8	44.9	47.0	53.5	55.6	57.9	4.4	6.0	8.6	42 55.63	+ 1.15	. .	+11.05	10 43 7.83	. .
	14	X, 18	F.	50.8	53.7	55.6	2.6	5.1	7.4	14.8	16.4	19.7	57 5.12	+ 0.75	. .	+11.05	10 57 16.92	− 1.00
	15	δ Leonis	F.	0.4	3.0	4.7	11.2	13.4	15.6	22.1	23.8	26.5	7 13.41	+ 1.16	+11.05	+11.05	11 7 25.62	− 0.06
	16	δ Crateris	F.	39.0	41.6	43.2	49.4	51.6	53.6	0.0	1.5	4.1	12 51.56	+ 0.89	+11.05	+11.05	11 13 3.50	− 0.02
21	17	51 Cephei	Ha.	33.7	26.5	56.8	23.3	6.4	47.6	29.6	15.0	. .	40 48.11	+ 1.45	. .	+11.70	6 41 1.26	+ 0.21
	18	ε Canis Majoris	Ha	14.9	17.7	19.6	. .	. .	. .	. .	. .	. .	53 28.65	+ 0.87	+11.75	+11.70	6 53 41.22	− 0.10
	19	δ Canis Majoris	Ha	50.9	53.7	55.3	2.2	4.4	6.7	13.5	15.3	18.0	3 4.44	+ 0.88	+11.59	+11.70	7 3 17.02	+ 0.06
	20	δ Geminorum	Ha.	10.9	13.6	15.3	21.8	24.0	26.2	33.0	34.4	37.2	12 24.04	+ 0.97	+11.67	+11.70	7 12 36.71	− 0.03
	21	α^2 Geminorum	Ha	7.4	10.4	12.0	19.4	21.8	24.3	31.5	33.2	36.2	26 21.80	+ 0.98	+11.76	+11.70	7 26 34.48	+ 0.18
	22	α Canis Minoris	Ha	18.0	20.7	22.3	28.4	30.5	32.5	38.7	40.2	42.7	32 30.44	+ 0.94	+11.74	+11.71	7 32 43.09	− 0.19
	23	β Geminorum	Ha	10.6	13.6	15.3	19.9	22.2	24.6	. .	. .	. .	37 24.56	+ 0.98	+11.75	+11.71	7 37 37.25	− 0.07
	24	φ Geminorum	Ha.	21.7	24.6	26.4	33.0	35.4	37.8	44.7	46.3	49.2	45 35.46	+ 0.98	+11.69	+11.71	7 45 48.15	+ 0.06
26	25	Sun S.	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	26	Sun N.	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	27	γ Pegasi	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	28	β Ceti	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	29	Polaris	F.	. .	. .	43.0	8.0	36.0	3.0	27.0	. .	. .	11 35.40	. .	. .	. .		. .
	30	θ^1 Ceti	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	31	δ Ursæ Minoris, S.P.	Ha	. .	. .	. .	33.5	59.0	25.5	16.0	50.5	9.0	12 34.12	+ 2.45	. .	+12.44	18 12 49.01	− 0.27
	32	μ Geminorum	Ha	55.0	59.5	3.9	6.2	8.4	10.5	12.7	17.2	21.6	15 8.33	− 0.05	+12.50	+12.44	6 15 20.72	− 0.10
	33	α Canis Majoris	Ha	10.8	13.5	15.0	21.5	23.6	25.8	32.2	33.7	36.4	39 23.61	+ 0.09	+12.40	+12.44	6 39 36.14	− 0.10
	34	ε Canis Majoris	Ha	14.7	17.6	19.2	26.2	28.5	30.8	37.8	39.7	42.6	53 28.57	+ 0.14	+12.48	+12.44	6 53 41.15	− 0.09
	35	δ Canis Majoris	Ha	50.8	53.5	55.2	2.0	4.3	6.6	13.4	15.0	17.9	3 4.30	+ 0.13	+12.42	+12.44	7 3 16,87	− 0.03
	36	δ Geminorum	Ha	11.0	13.8	15.4	22.0	24.3	26.4	33.1	34.8	37.5	12 24.26	− 0.05	+12.43	+12.44	7 12 36.65	− 0.05
	37	α^2 Geminorum	Ha	7.8	10.7	12.5	19.8	22.3	24.6	31.9	33.9	36.7	26 22.24	− 0.09	+12.34	+12.44	7 26 34.59	+ 0.34
	38	α Canis Minoris	Ha	18.3	20.9	22.4	28.6	30.6	32.6	38.8	40.3	42.9	32 30.60	+ 0.01	+12.47	+12.44	7 32 43.05	− 0.19
	39	Moon I, N.	F.	14.3	17.3	19.1	26.0	28.4	30.7	37.8	39.6	42.4	37 28.40	− 0.06	. .	+12.36	7 37 40.70	+70.53
	40	φ Geminorum	F.	22.0	25.0	26.6	33.5	35.9	38.0	45.0	46.6	49.5	45 35.79	− 0.06	+12.36	+12.36	7 45 48.09	− 0.08
27	41	β Tauri	Ha	53.8	56.6	58.4	5.3	7.6	9.9	16.9	18.6	21.5	18 7.62	− 0.13	+12.29	+12.24	5 18 19.73	− 0.07
	42	δ Orionis	Ha	10.0	12.5	14.2	20.2	22.3	24.4	30.4	32.0	34.6	25 22.29	− 0.08	+12.19	+12.24	5 25 34.45	+ 0.02
	43	α Leporis	Ha	. .	. .	. .	. .	0.7	2.6	7.2	8.8	11.4	26 58.52	− 0.04	+12.21	+12.23	5 27 10.71	− 0.02
	44	ε Orionis	Ha	25.0	27.6	29.2	35.2	37.3	39.3	45.4	46.9	49.4	29 37.26	− 0.08	+12.26	+12.23	5 29 49.41	− 0.04
	45	α Orionis	Ha	56.9	59 5	1.0	7.2	9.2	11.3	17.5	18.9	21.6	48 9.23	− 0.10	+12.21	+12.23	5 48 21.36	− 0.01
	46	δ Ursæ Minoris, S.P.	Ha	. .	. .	. .	. .	2.0	27.0	18.0	53.0	10.5	12 36.38	+ 0.82	. .	+12.23	18 12 49.43	− 0.15
	47	μ Geminorum	Ha	55.3	58.1	59.8	6.6	8.8	10.9	17.5	19.2	22.0	15 8.69	− 0.12	+12.19	+12.23	6 15 20.80	0.00
	48	γ Geminorum	Ha	1.6	4.3	6.0	12.2	14.4	16.5	22.9	24.5	27.0	30 14.38	− 0.11	+12.26	+12.22	6 30 26.49	− 0.07
	49	β Geminorum	S.	11.3	14.4	16.0	23.0	25.4	27.7	34.7	36.4	39.3	37 25.36	− 0.13	+12.00	+12.03	6 37 37.26	0.00

1, 10, 13. Wire A used.
10. Observed for Angelina.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	340 50	10 2.5	24.2	26.2	27.9	35	. .	282	. .	260	. .	75.6	19 3 29.7	. .	+ 21.4	70 10 12.3	— 1.9
2	0 24	9 29.3	23.2	24.8	28.2	37	. .	504	. .	504	. .	75.6	359 32 35.8	25.2	— 0.5	50 38 56.5	+ 1.4
3	359 24	23.4	16.4	17.3	20.2	35	. .	738	. .	716	. .	75.6	0 32 1.5	. .	+ 0.6	51 38 23.3	+ 1.0
4	355 20	24.5	18.6	18.8	22.9	35	. .	514	. .	514	. .	75.6	4 36 0.1	. .	+ 5.0	55 42 26.3	+ 0.1
5	353 2	10 0.8	25.4	25.3	29.2	37	. .	960	. .	968	. .	75.6	5 54 44.1	. .	+ 6.4	57 1 11.7	— 0.5
6	283 38	0.4	24.5	25.5	29.0	39	210	206	. .	. .	. .	75.6	76 19 1.8	. .	+ 4 9.8	127 29 32.8	— 0.9
7	286 50	9 26.2	19.8	20.8	24.2	37	570	580	. .	. .	. .	75.6	73 6 32.3	. .	+ 3 21.6	124 16 15.1	— 0.9
8	341 32	10 4.8	27.9	29.0	2.4	37	. .	418	. .	400	. .	75.6	18 24 38.9	. .	+ 20.6	69 31 20.7	— 0.2
9	327 16	2.2	24.8	25.5	0.2	35	328	310	. .	. .	. .	75.6	32 40 3.6	. .	+ 39.7	83 47 4.5	— 3.1
10	330 20	5.5	27.4	29.0	2.8	39	. .	680	. .	700	. .	75.6	29 34 40.8	. .	+ 35.1	80 41 37.1	
11	316 20	4.3	27.0	28.2	3.3	32	. .	. .	. .	388	400	75.6	43 35 22.0	. .	+ 58.9	94 42 42.1	— 3.0
12	312 38	18.9	12.0	13.3	15.7	29	. .	826	. .	822	. .	75.6	47 16 56.5	. .	+ 1 7.0	98 24 24.7	— 2.8
13	340 45	7 20.7	14.8	14.0	19.5	34	. .	988	. .	974	. .	75.6	19 8 15.0	25.5	+ 21.5	70 14 57.7	— 1.2
14	289 48	11 21.2	15.5	14.3	19.7	34	. .	136	. .	064	. .	75.6	70 7 44.4	. .	+ 2 49.9	121 16 55.5	— 0.3
15	342 16	10 1.6	25.0	24.2	29.3	37	. .	028	. .	012	. .	75.6	17 40 34.8	. .	+ 19.7	68 47 15.7	— 0.2
16	306 58	6.5	29.8	29.9	5.3	37	. .	074	. .	064	. .	75.6	52 58 7.0	25.5	+ 1 21.9	104 5 50.1	— 0.9
17		8.1	2.4	2.8	7.3	35	. .										
18																	
19																	
20																	
21																	
22																	
23																	
24																	
25	312 12	9 21.5	20.5	23.3	24.8	34	144	168	. .	. .	. .	75.1	47 43 39.4	39.6	- 1 6.2	98 51 6.8	
26	312 44	24.5	24.5	28.5	28.3	32	. .	. .	. .	574	558	75.1	47 11 19.9	. .	+ 1 5.0	98 18 46.1	
27	335 32	23.6	21.4	23.6	28.4	36	. .	564	. .	558	. .	75.1	24 24 18.5	. .	+ 27.2	75 31 6.9	+ 0 7
28	302 24	10 6.4	5.6	6.5	10.2	38	. .	. .	036	040	. .	75.1	57 32 54.2	41.4	+ 1 33.9	108 40 49.3	— 3.0
29	49 40	0.2	28.0	2.0	2.1	36	. .	345	348	308	. .	75.1	310 16 21.5	. .	— 1 10.5	1 21 32.2	+ 1.0
30	312 14	7.1	4.8	8.0	12.6	37	. .	. .	. .	100	. .	75.1	47 42 40.8	. .	+ 1 5.7	98 50 7.7	— 1.6
31																	
32																	
33																	
34																	
35																	
36																	
37																	
38																	
39	347 34	9 28.9	24.5	24.9	28.3	34	. .	720	782	868	. .	75.5	12 21 54.3	30.5	+ 13.4	63 28 28.9	
40																	
41																	
42																	
43																	
44																	
45																	
46																	
47																	
48																	
49	349 22	10 20.9	19.3	18.7	22.1	32	. .	094	. .	108	. .	74.9	10 33 36.2	. .	+ 11.3	61 40 8.7	— 1.3

No.	Barom.	At. Ther.
	in.	°
2	30.27	28.5
16	30.28	28.0
25	30.37	36.2
28	30.32	56.0
40	30.16	32.5

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
25	— 6.6	— 16 10.3	. .	— 16 16.9
26	— 6.5	+ 16 10.3	. .	+ 16 3.8
39	—11 43.0	+ 15 10.8	. .	+ 3 27.8

DATE.	Number.		OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.														m. s.	s.	s.	s.	h. m. s.	s.
Feb. 27	1		Anonymous . .	S.	. .	. .	29.3	31.6	33.8	36.2	38.8	. .	. .	55 33.94	− 0.14	. .	+12.03	7 55 45.83	− 1.14
	2	κ	Cephei, S. P. . .	S.	. .	. .	6.8	57.5	47.7	38.1	28.5	. .	. .	12 47.72	+ 0.12	. .	+12.03	20 12 59.87	+ 0.24
	3		VIII, 6	S.	17.1	19.9	21.8	29.0	31.3	33.8	40.9	42.6	45.6	25 31.33	− 0.01	. .	+12.02	8 25 43.34	− 1.00
	4		Moon I, N. . .	S.	2.3	5.2	7.0	13.8	16.0	18.4	25.2	27.0	29.8	33 16.08	− 0.12	. .	+12.02	8 33 27.98	+68.35
	5		Uranus I, N. . .	S.	0.9	3.4	5.0	. .	. .	. .	22.3	23.9	26.6	39 13.68	− 0.12	. .	+12.02	8 39 25.58	. .
	6		Uranus II, S. . .	S.	. .	. .	9.9	12.0	14.2	16.3	18.4	. .	. .	39 14.16	− 0.12	. .	+12.02	8 39 26.06	. .
	7		12-Yr. Cat. 1879, S.P.	S.	. .	. .	16.3	4.6	53.3	41.2	29.3	. .	. .	52 52.94	+ 0.19	. .	+12.01	20 53 5.14	− 0.33
	8		Weisse (2) 67 . .	S.	. .	. .	10.4	13.0	16.2	18.9	. .	. .	. .	5 16.05	− 0.17	. .	+12.01	9 5 27.89	− 1.87
	9	α	Hydræ	S.	0.6	3.0	4.5	10.9	12.8	14.8	21.2	22.7	25.3	21 12.87	− 0.07	+11.99	+12.01	9 21 24.81	− 0.01
	10		Weisse (2), 584 .	S.	51.4	54.6	56.5	4.3	6.9	9.5	17.3	19.2	22.7	29 6.93	− 0.15	. .	+12.01	9 29 18.79	− 1.75
	11		IX, 4	S.	. .	. .	32.9	35.3	37.7	40.0	42.4	. .	. .	37 37.66	− 0.02	. .	+12.01	9 37 49.65	− 1.10
	12		Bessel's Zones 354	S.	. .	. .	. .	10.5	12.8	15.3	20.2	21.9	24.8	43 10.46	− 0.14	. .	+12.00	9 43 22.32	− 1.60
	13	79	Draconis, S. P. .	S.	. .	. .	. .	. .	0.3	53.2	45.7	. .	. .	51 0.09	+ 0.05	. .	+12.00	21 51 12.14	− 0.07
	14	α	Leonis	S.	16.4	19.0	20.6	27.0	29.0	31.1	37.3	38.9	41.5	1 28.98	− 0.10	+12.01	+12.00	10 1 40.88	+ 0.05
	15	32	Ursæ Majoris . .	S.	13.7	19.9	23.6	38.8	43.7	48.6	3.7	7.3	13.5	8 43.64	− 0.49	. .	+12.00	10 8 55.15	− 0.33
	16	ρ	Leonis	S.	47.4	50.0	55.5	57.8	59.9	2.0	4.0	9.7	12.3	25 59.84	− 0.10	+12.04	+12.00	10 25 11.74	− 0.11
	17	ν	Leonis	S.	6.8	9.4	10.8	16.9	19.1	21.1	27.2	28.8	31.4	30 19.06	− 0.08	+12.00	+12.00	11 30 30.98	− 0.04
	18	γ	Cephei, S. P. . .	S.	46.8	35.2	28.8	. .	. .	. .	. .	. .	. .	33 52.49	+ 0.11	. .	+11.99	23 34 4.59	+ 0.80
	19	β	Leonis	S.	14.7	17.3	18.8	25.1	27.3	29.4	35.9	37.3	40.0	42 27.31	− 0.11	+11.96	+11.98	11 42 39.18	0.00
	20		Jupiter I, S. . .	S.	31.7	34.0	35.5	. .	. .	. .	52.0	53.4	56.0	58 43.77	− 0.09	. .	+11.98	11 58 55.60	. .
	21		Jupiter II, N. . .	S.	. .	. .	42.7	44.8	46.9	48.9	51.0	. .	. .	58 46.86	− 0.09	. .	+11.98	11 58 58.75	. .
	22	η	Virginis, R. . .	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .		. .
28	23	λ	Ursæ Minoris, S. P.	Sk.	. .	. .	36.0	45.0	56.0	. .	. .	. .	. .	48 57.03	+ 7.22	. .	+11.88	19 49 16.13	− 0.57
	24	κ	Cancri	Sk.	32.0	34.7	36.3	42.5	44.6	46.7	53.0	54.5	57.0	0 44.59	− 0.03	+11.84	+11.87	9 0 56.43	+ 0.02
	25		Moon I, N. . .	Sk.	24.2	26.9	28.6	35.3	37.6	39.8	46.5	48.0	50.9	25 37.53	− 0.06	. .	+11.87	9 25 49.34	+65.97
	26	μ	Leonis	Sk.	11.6	14.5	16.0	22.9	25.4	27.6	34.5	36.2	39.0	15 25.30	− 0.08	+11.88	+11.86	9 45 37.05	− 0.03
	27	α	Leonis	Sk.	16.6	19.0	20.7	27.0	29.0	31.2	37.5	39.0	41.6	1 29.07	− 0.04	+11.86	+11.86	10 1 40.89	− 0.04
	28	γ¹	Leonis	Sk.	37.9	40.6	42.3	48.8	51.0	53.0	59.7	1.4	4.0	12 50.97	− 0.06	+11.89	+11.86	10 13 2.77	− 0.05
	29	ρ	Leonis	Sk.	47.4	50.0	51.8	57.9	0.1	2.0	8.3	9.9	12.4	25 59.98	− 0.03	+11.83	+11.85	10 26 11.80	− 0.05
Mar. 1	30	α²	Geminorum . .	E.	. .	. .	18.5	21.0	23.5	25.9	28.5	. .	. .	26 23.48	− 0.24	+11.22	+11.46	7 26 34.70	+ 0.48
	31	α	Canis Minoris .	E.	. .	. .	27.6	29.6	31.6	33.7	35.8	. .	. .	32 31.66	− 0.13	+11.52	+11.46	7 32 42.99	− 0.22
	32		VII, 7	E.	. .	. .	. .	. .	. .	. .	23.6	25.4	28.0	35 14.30	+ 0.01	. .	+11.46	7 35 25.77	− 0.82
	33	φ	Geminorum . .	E.	22.9	25.8	27.6	34.4	36.7	39.0	45.8	47.7	50.6	45 36.72	− 0.22	+11.56	+11.46	7 45 47.96	− 0.18
	34	λ	Ursæ Minoris, S. P.	E.	. .	. .	32.0	43.0	54.0	. .	. .	. .	. .	48 54.43	+11.31	. .	+11.46	19 49 17.20	− 0.18
	35		Anonymous . .	E.	. .	. .	16.2	18.6	21.0	23.3	25.8	. .	. .	0 20.98	− 0.23	. .	+11.46	8 0 32.21	− 1.15
	36	α	Leonis	E.	16.9	19.5	21.2	27.5	29.6	31.6	37.9	39.5	42.0	1 29.52	− 0.16	+11.53	+11.46	10 1 40.82	− 0.11
	37	γ¹	Leonis	E.	38.4	41.2	42.8	49.3	51.5	53.7	0.3	1.9	4.6	12 51.52	− 0.19	+11.47	+11.46	10 13 2.79	− 0.03
	38		Moon I, N. . .	E.	25.0	27.7	29.3	35.8	37.8	39.8	46.5	48.2	50.7	14 37.87	− 0.17	. .	+11.46	10 14 49.16	+63.80
	39	ζ	Cygni	F.	7.5	10.5	12.3	19.1	21.5	24.0	31.0	32.6	35.4	7 21.54	− 0.34	+11.67	+11.68	21 7 32.88	+ 0.06
	40	α	Cephei	F.	53.2	58.9	2.2	. .	. .	. .	37.0	40.2	45.6	15 19.52	− 0.46	. .	+11.68	21 15 30.74	− 0.27
	41	ε	Pegasi	F.	34.9	37.2	38.9	45.0	47.0	49.1	55.4	56.9	59.5	37 47.10	− 0 31	+11.72	+11.68	21 37 58.47	− 0.03
2	42		Sun I, N. . . .	F.	6.9	9.5	11.0	17.0	19.2	21.3	27.4	29.0	31.7	52 19.22	− 0.29	. .	+11.68	22 52 30.60	. .
	43		Sun, S.	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .		. .
	44		Mercury I, S. . .	F.	25.2	28.0	29.5	35.5	37.5	39.5	45.8	47.2	49.8	57 37.56	− 0.30	. .	+11.68	23 57 48.94	. .
	45	α	Andromedæ . .	F.	. .	. .	34.9	37.2	39.7	41.9	44.4	. .	. .	1 39.62	− 0.34	+11.69	+11.68	0 1 50.96	+ 0.01
	46	γ	Pegasi		. .	. .	. .	. .	. .	. .	40.6	42.3	44.8	6 32.19	− 0.31	+11.64	+11.68	0 6 43.56	+ 0.04
	47		Polaris	F.	. .	. .	33.5	59.0	26.5	52.0	19.0	. .	. .	11 26.00	− 4.66	. .	+11.68	1 11 33.02	− 3.27
	48	δ	Ursæ Minoris, S. P.	Ha.	. .	. .	46.1	11.0	37.0	2.8	29.8	. .	. .	12 37.34	+ 0.97	. .	+11.77	18 12 50.08	− 0.48
	49	μ	Geminorum . .	Ha.	56.0	58.9	0.5	7.0	9.3	11.5	18.0	19.8	22.5	15 9.28	− 0.31	+11.74	+11.77	6 15 20.74	− 0.01

2, 4. Bisections at set C.
7, 13, 25, 38. Bisections at sets B and D.
8. Bisections at wires V and VI.
38. Wire A used.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	350 10	9 18.7	15.2	17.3	21.2	39	. .	. .	. .	. .	952	74.9	9 47 4.9	33.0	+ 10.5	60 53 36.6	+ 6.1
2	63 40	28.6	26.1	25.4	29.6	32	. .	018	. .	006	. .	74.9	296 15 11.8	33.0	− 2 2.8	347 19 30.2	− 1.0
3	290 22	10 5.2	4.5	3.4	7.0	33	. .	533	. .	473	. .	74.9	69 33 42.1	. .	+ 2 42.1	120 42 45.4	− 5.1
4	345 0	9 29.8	29.6	29.4	2.2	32	190	. .	. .	. .	260	74.9	14 55 17.9	. .	+ 16.2	66 1 55.3	
5	340 10	10 6.2	4.4	3.6	8.1	36	140	. .	. .	. .	100	74.9	19 46 23.1	. .	+ 21.9	70 53 6.2	
6	340 10	6.2	4.4	3.6	8.1	36	. .	443	. .	593	. .	74.9	19 46 29.1	. .	+ 21.9	70 53 12.2	
7	60 56	9.1	7.0	6.7	9.5	34	101	115	. .	. .	. .	74.9	298 59 54.1	. .	− 1 49.6	350 4 25.7	− 1.1
8	5 22	6.3	4.5	4.5	7.4	30	. .	. .	. .	577	593	74.9	354 32 58.7	32.3	− 5.9	45 39 14.0	+ 5.1
9	312 56	9.4	7.7	8.1	12.6	32	. .	066	. .	006	. .	74.9	46 59 24.2	. .	+ 1 5.4	98 6 50.8	− 0.3
10	359 24	3.9	2.0	2.0	4.5	34	. .	. .	. .	644	576	74.9	0 31 58.1	. .	+ 0.6	51 38 19.9	+ 2.3
11	291 52	5.5	4.0	3.3	7.7	38	. .	. .	. .	288	242	74.9	68 4 55.3	31.0	+ 2 31.0	119 13 47.5	− 3.9
12	353 2	3.9	2.9	3.1	6.1	37	. .	. .	. .	540	558	74.9	6 54 43.9	. .	+ 7.4	58 1 12.5	− 0.4
13	67 52	6.2	4.3	2.5	5.5	28	240	240	. .	. .	. .	74.9	292 2 20.9	. .	− 2 30.2	343 6 11.9	− 0.5
14	333 38	9 29.5	28.5	27.4	1.9	35	. .	. .	. .	830	842	74.9	26 28 12.8	. .	+ 30.5	77 35 4.5	− 1.3
15	26 46	10 8.1	7.7	6.2	8.2	34	. .	248	. .	126	. .	74.9	333 9 56.0	. .	− 31.0	24 15 46.2	− 3.4
16	331 0	1.5	29.8	29.8	4.1	34	. .	230	. .	350	. .	74.9	28 55 50.6	30.0	+ 33.9	80 2 45.7	− 2.4
17	320 56	7.8	6.5	5.2	9.8	36	. .	834	. .	842	. .	74.9	39 0 35.6	29.0	+ 49.7	90 7 46.5	− 0.5
18	64 4	6.7	4.1	3.5	5.8	32	. .	820	. .	. .	. .	74.9	295 51 30.3	. .	− 2 6.1	346 55 45.4	− 1.6
19	336 20	1.5	1.6	29.7	4.6	37	. .	740	. .	684	. .	74.9	23 36 43.5	. .	+ 26.8	74 43 31.5	− 0.3
20	322 50	0.2	0.5	29.2	3.7	33	304	. .	. .	. .	186	74.9	37 5 34.3	. .	+ 46.4	88 12 41.9	
21	322 50	0.2	0.5	29.2	3.7	30	. .	328	. .	328	. .	74.9	37 4 49.5	. .	+ 46.4	88 11 57.1	
22	218 46	12.1	10.9	9.6	11.0	30	518	593	. .	530	460	74.9	141 9 2.5	28.0	− 49.5	89 58 8.2	+ 2.4
23	52 6	4.5	3.4	3.4	3.2	35	968	. .	930	. .	. .	75.6	307 50 18.7	33.0	− 1 17.9	358 55 22.0	− 0.1
24	332 14	9 29.8	27.6	26.6	28.5	37	. .	718	. .	660	. .	75.6	27 42 40.2	32.1	+ 31.9	78 49 33.3	0.0
25	341 17	I 7 19.3 II 20.0	14.6 16.5	15.1 15.0	18.6 19.0	40	963	. .	990	. .	980	75.6	18 37 46.2	. .	+ 20.5	69 44 27.9	
26	347 38	10 11.1	7.0	6.5	8.9	32	. .	231	. .	225	. .	75.6	12 16 26.9	31.4	+ 13 2	63 23 1.3	− 1.2
27	333 38	8.1	4.5	6.2	6.9	35	. .	542	. .	546	. .	75.6	26 18 15.6	. .	+ 30.1	77 25 6.9	+ 1.1
28	341 32	2.5	29.9	29.1	1.9	37	. .	519	. .	492	. .	75.6	18 24 40.1	. .	+ 20.3	69 31 21.6	+ 1.1
29	331 0	4.0	1.9	2.2	4.7	34	. .	252	. .	178	. .	75.6	28 55 52.0	31.3	+ 33.6	80 2.46.8	− 1.3
30	353 12	3 3	1.3	2.4	2.8	33	. .	. .	. .	330	320	75.4	6 43 38.2	. .	+ 7.1	57 50 6.5	+ 0.1
31	326 36	9.1	7.2	7.5	9.0	35	. .	230	. .	180	. .	75.4	33 20 12.1	38.0	+ 39.4	84 27 12.7	− 0.8
32	293 10	10.8	7.8	7.4	9.5	38	. .	. .	. .	950	940	75.4	66 47 10.1	. .	+ 2 18.8	117 55 50.1	− 6.0
33	348 8	13.3	10.7	11.1	14.2	33	. .	910	. .	890	. .	75.4	11 47 56.3	. .	+ 12.5	62 54 30.0	+ 0.1
34	52 6	4.8	2.8	4.0	4.8	35	. .	840	830	810	. .	75.4	307 50 17.2	. .	− 1 17.0	358 55 21.4	− 0.1
35	350 0	9 25.5	24.3	23.5	25.2	34	. .	. .	. .	265	255	75.4	9 55 44.6	. .	+ 10.5	61 2 16.3	+ 5.9
36	333 38	10 6.8	4.2	3.7	4.9	35	. .	575	. .	555	. .	75.4	26 18 14.3	. .	+ 29.7	77 25 5.2	− 0.6
37	341 32	9 28.7	29.0	27.0	28.0	37	650	645	. .	. .	. .	75.4	18 24 39.2	36.0	+ 20.0	69 31 20.4	0.0
38	336 42	10 14.2	11.0	12.8	15.5	37	045	. .	285	. .	535	75.4	23 12 16.0	. .	+ 25.8	74 19 3.0	
39	350 46	9.4	7.9	8.6	12.0	38	. .	. .	. .	572	584	74.7	9 11 4.8	47.0	+ 9.5	60 17 35.5	− 0.1
40	23 6	5.2	3.1	2.3	6.8	39	. .	286	. .	288	. .	74.7	336 51 10.5	. .	− 25.1	27 57 6.6	− 2.1
41	330 20	1.6	28.0	27.9	4.1	32	. .	. .	. .	. .	480	74.7	29 35 22.3	. .	+ 33.2	80 42 16.7	− 0.9
42	314 16	8.9	. .	7.2	. .	36	766	786	. .	. .	. .	74.7	45 40 35.0	54.8	+ 59.3	96 47 55.5	
43	313 44	1.9	. .	0.6	. .	38	. .	. .	. .	166	196	74.7	46 12 50.7	. .	+ 1 0.4	97 20 12.3	
44	322 42	7.5	3.9	3.7	8.9	34	. .	648	. .	580	. .	74.7	37 14 0.0	57.1	+ 43.8	88 21 5.0	
45																	
46	335 32	0.4	25.9	27.0	4.0	36	. .	. .	. .	340	276	74.7	24 24 19.8	. .	+ 26.2	75 31 7.2	+ 0.8
47	49 40	9 26.2	25.0	27.4	29.7	36	206	232	228	226	228	74.7	310 16 15.9	57.9	− 1 7.8	1 21 29.3	+ 1.2
48																	
49																	

No.	Barom.	At. Ther.
	in.	°
1	30.25	36.0
23	30.16	37.2
24	30.16	35.8
25	30.14	35.3
29	30.15	35.0
31	30.06	43.5
37	30.05	40.0
39	30.10	40.0
42	30.10	47.0
45	30.10	50.5
47	30.12	62.5

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
4	−14 0.4	+ 15 3.1	. .	+ 1 2.7
5	− 0.2	+ 3.0	. .	+ 2.8
6	− 0.2	− 3.0	. .	− 3.2
20	− 1.2	− 22.4	. .	− 23.6
21	− 1.2	+ 22.4	. .	+ 21.2
25	−17 17.8	+ 14 56.6	. .	− 2 21.2
38	−21 15.4	+ 14 51.6	. .	− 6 23.8
42	− 6.4	+ 16 8.4	. .	+ 16 2.0
43	− 6.4	− 16 8.4	. .	− 16 14.8
44	− 5.8	− 3.6	. .	− 9.4

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.	
1874.													m. s.	s.	s.	s.	h. m. s.	s.	
Mar. 2	1	γ Geminorum . .	Ha.	2.3	5.0	6.6	12.9	15.0	17.2	23.6	25.0	27.8	30 15.04	− 0.30	+11.75	+11.76	6 30 26.50	− 0.02	
	2	α Canis Majoris. .	Ha	11.9	14.5	16.0	22.6	24.7	26.9	33.2	34.8	37.5	39 24.68	− 0.26	+11.67	+11.76	6 39 36.18	+ 0.01	
	3	δ Geminorum . .	Ha.	11.9	14.7	16.2	23.0	25.2	27.4	33.9	35.6	38.3	12 25.13	− 0.31	+11.71	+11.76	7 12 36.58	− 0.07	
	4	α^2 Geminorum . .	Ha.	8.5	11.6	13.3	20.5	23.0	25.4	32.6	34.5	37.5	26 22.99	− 0.32	+11.78	+11.76	7 26 34.43	+ 0.22	
	5	α Canis Minoris .	Ha.	19.2	21.8	23.3	29.4	31.5	33.6	39.7	41.2	43.6	32 31.48	− 0.29	+11.85	+11.76	7 32 42.95	− 0.25	
	6	β Geminorum . .	Ha.	11.8	14.8	16.4	23.3	25.6	28.0	35.0	36.7	39.5	37 25.67	− 0.32	+11.85	+11.76	7 37 37.11	− 0.12	
	7	λ Ursæ Minoris, S. P.	F.	46.0	35.0	13.0	. .	. .	. .	. .	. .	. .	48 57.20	+ 4.05	. .	+11.65	19 49 12.90	− 5.22	
	8	15 Argus	F.	46.6	49.6	51.0	57.8	0.1	2.3	9.1	10.7	13.5	2 0.08	− 0.24	+11.74	+11.65	8 2 11.49	− 0.15	
	9	Anonymous . .	F.	. .	. .	46.5	48.5	50.8	53.0	55.1	. .	. .	32 50.78	− 0.26	. .	+11.65	8 33 2.17	− 0.90	
	10	Uranus, C. . .	F.	36.3	38.9	40.6	47.0	49.3	51.4	57.9	59.5	2.2	38 49.23	− 0.30	. .	+11.65	8 39 0.58		
	11	ι Ursæ Majoris (R.)	F.	5.5	9.5	11.7	21.0	24.0	27.2	36.6	38.7	42.6	50 24.09	+ 0.39	. .	+11.65	8 50 36.13	− 0.11	
	12	Weisse (2), 363 .	F.	. .	. .	36.2	38.9	41.6	44.3	49.7	51.9	55.4	18 38.90	− 0.34	. .	+11.65	9 18 50.21	− 1.82	
	13	Bonn. VI + 39°, 2260	F.	29.7	32.9	35.0	43.0	45.5	48.0	56.3	58.1	1.4	25 45.54	− 0.34	. .	+11.64	9 25 56.84	− 1.77	
	14	Anonymous . .	F.	5.6	8.7	10.5	18.0	20.5	23.0	30.3	32.2	35.2	36 20.44	− 0.32	. .	+11.64	9 36 31.76	− 1.66	
	15	IX, 4	F.	. .	. .	. .	. .	. .	. .	47.5	49.2	52.2	37 38.14	− 0.23	. .	+11.64	9 37 49.55	− 1.09	
	16	IX, 13	F.	45.1	48.3	49.8	54.8	59.7	4.0	9.0	10.8	13.8	47 59.48	− 0.23	. .	+11.64	9 48 10.89	− 1.11	
	17	IX, 15	F.	37.5	40.8	42.7	50.4	52.9	55.5	3.4	5.2	8.3	55 52.97	− 0.22	. .	+11.64	9 56 4.39	− 1.16	
	18	IX, 16	F.	31.2	34.3	36.0	43.6	45.9	48.4	55.9	57.8	0.8	59 45.99	− 0.23	. .	+11.64	9 59 57.40	− 1.13	
	19	α Leonis	F.	. .	. .	. .	. .	. .	. .	38.0	39.5	42.0	1 29.54	− 0.29	+11.64	+11.64	10 1 40.89	− 0.04	
	20	Anonymous . .	F.	40.0	42.9	44.5	51.0	53.0	55.2	1.9	3.6	6.0	4 53.12	− 0.29	. .	+11.64	10 5 4.47	− 1.40	
	21	γ^1 Leonis	F.	38.6	41.3	42.8	49.4	51.6	53.7	0.5	1.8	4.6	12 51.59	− 0.30	+11.51	+11.64	10 13 2.93	+ 0.11	
	22	Weisse 208 . .	F.	. .	. .	. .	. .	. .	. .	35.0	36.7	39.1	13 26.68	− 0.29	. .	+11.64	10 13 38.03	− 1.28	
	23	Schjellerup 3815 .	F.	4.2	6.8	8.4	14.4	16.6	18.6	24.8	26.3	28.9	18 16.56	− 0.28	. .	+11.64	10 18 27.92	− 1.23	
	24	Anonymous . .	F.	9.7	12.3	13.8	19.9	22.0	24.0	30.3	31.6	34.3	22 21.99	− 0.28	. .	+11.64	10 22 33.35	− 1.22	
	25	Lamont 923 . .	F.	. .	. .	. .	. .	. .	. .	. .	3.9	6.3	28 54.08	− 0.27	. .	+11.64	10 29 5.45	− 1.15	
	26	Weisse 560 . .	F.	58.8	1.5	2.9	9.0	11.0	13.3	19.5	20.7	23.4	32 11.12	− 0.27	. .	+11.64	10 32 22.49	− 1.15	
	27	Weisse 638 . .	F.	18.2	21.0	22.5	28.6	30.6	32.6	38.8	40.1	42.9	36 30.59	− 0.27	. .	+11.64	10 36 41.96	− 1.14	
	28	ι Leonis	F.	15.4	18.0	19.6	25.8	27.8	30.0	36.2	37.7	40.3	42 27.87	− 0.29	+12.70	+11.64	10 42 39.22	− 0.06	
	29	Anonymous . .	F.	18.8	21.4	22.9	29.2	31.3	33.5	39.1	41.3	43.9	44 31.27	− 0.26	. .	+11.64	10 44 42.65	− 1.11	
	30	X, 17	F.	. .	. .	54.4	56.7	59.3	1.9	6.9	8.6	11.9	47 56.79	− 0.22	. .	+11.64	10 48 8.21	− 1.14	
	31	Moon II . . .	F.	42.8	45.4	47.0	53.3	55.3	57.4	3.8	5.3	8.0	2 55.37	− 0.29	. .	+11.63	11 3 6.71	−62.11	
	32	β Leonis	F.	15.2	17.9	19.3	25.8	27.8	30.0	36.4	38.0	40.6	42 27.89	− 0.29	+11.60	+11.63	11 42 39.23	+ 0.01	
	33	XI, 14	F.	0.5	3.8	. .	. .	. .	. .	. .	. .	. .	46 15.90	− 0.22	. .	+11.63	11 46 27.31	− 1.07	
	34	XI, 16	F.	. .	. .	24.5	26.9	29.5	31.8	34.4	. .	. .	50 29.42	− 0.23	. .	+11.63	11 50 40.82	− 1.03	
3	35	ε Pegasi	Sk.	34.8	37.5	38.9	45.1	47.0	49.2	55.4	57.0	59.5	37 47.16		0.00	+11.38	+11.46	21 37 58.62	− 0.00
4	36	Sun I, S. . . .	Sk.	33.8	36.3	38.0	43.9	46.0	48.2	54.2	55.9	58.4	58 46.08	+ 0.19	. .	+11.47	22 58 57.74	. .	
	37	Sun II, N. . . .	Sk.	. .	. .	. .	. .	. .	. .	4.5	6.0	8.6	0 56.27	+ 0.19	. .	+11.47	23 1 7.93	. .	
	38	β Ceti.	Sk.	50.3	52.9	54.5	. .	. .	. .	11.6	13.5	16.0	37 3.13	+ 0.31	+11.29	+11.47	0 37 14.94	+ 0.23	
	39	α Hydræ	Sk.	0.7	3.3	4.9	8.8	11.0	13.0	. .	. .	. .	21 13.05	+ 0.33	+11.40	+11.49	9 21 24.87	+ 0.06	
	40	Weisse (2), 503 .	Sk.	5.4	8.5	10.4	. .	. .	. .	31.0	33.0	36.0	25 20.72	− 0.29	. .	+11.49	9 25 31.92	− 1.70	
	41	ε Leonis	Sk.	18.2	21.0	22.7	29.5	31.7	34.0	40.7	42.3	45.0	38 31.68	− 0.08	+11.57	+11.49	9 38 43.09	− 0.14	
	42	μ Leonis	Sk.	11.9	14.9	16.6	23.5	25.7	28.0	34.9	36.3	39.2	45 25.67	− 0.11	+11.54	+11.49	9 45 37.05	− 0.06	
	43	α Leonis (R.) . .	Sk.	16.3	19.0	20.4	26.7	28.5	30.5	37.2	38.8	41.4	1 28.76	+ 0.55	. .	+11.49	10 1 40.80	− 0.14	
	44	X, 2.	Sk.	. .	. .	. .	8.7	11.0	13.4	18.0	19.8	22.7	10 8.75	+ 0.59	. .	+11.49	10 10 20.83	− 1.11	
	45	Schjellerup 3815 .	Sk.	. .	. .	12.1	14.3	16.4	18.4	20.4	. .	. .	18 16.32	+ 0.15	. .	+11.49	10 18 27.96	− 1.24	
	46	Weisse 404 . .	Sk.	. .	. .	. .	. .	52.0	54.0	58.2	59.6	2.3	23 49.96	+ 0.19	. .	+11.49	10 24 1.61	− 1.21	
	47	X, 11	Sk.	32.2	35.7	37.5	44.9	47.5	50.0	57.3	59.0	2.3	3 47.38	+ 0.71	. .	+11.49	10 31 59.58	− 1.14	
	48	X, 16	Sk.	15.9	18.8	20.6	27.3	29.7	31.9	38.9	40.6	43.2	46 20.66	+ 0.56	. .	+11.49	10 36 41.71	− 1.11	
	49	X, 18	Sk.	50.6	53.5	55.4	2.6	5.0	7.4	14.5	16.0	19.3	57 4.92	+ 0.64	. .	+11.49	10 57 17.05	− 1.12	
	50	δ Leonis	Sk.	1.0	3.7	5.5	12.0	14.3	16.5	23.0	24.6	27.3	7 14.21	− 0.04	+11.60	+11.49	11 7 25.66	− 0.17	

9. Telescope-micrometer reading decreased 2 revolutions in reduction.
12. Telescope-micrometer reading decreased 5 revolutions in reduction.
20, 39. Wire A used.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1																	
2																	
3																	
4																	
5																	
6																	
7																	
8	297 8	10 8.5	6.5	4.7	9.3	36	. .	926	. .	946	. .	75.2	62 48 21.9	42.2	+ 1 55.0	113 56 38.1	+ 1.1
9	307 40	9 28.5	27.5	25.3	0.2	27	. .	. .	. .	. .	648	75.2	52 13 35.3	. .	+ 1 16.5	103 21 13.0	− 3.6
10	340 12	10 6.0	4.0	2.5	7.0	38	. .	360	. .	346	. .	75.2	19 44 56.8	42.2	+ 21.3	70 51 39.3	
11	170 18	19.9	17.8	16.5	19.9	35	. .	498	. .	504	. .	75.2	189 38 26.3	. .	+ 10.1	41 37 44.8	− 3.5
12	2 36	17.9	15.9	15.4	18.2	36	. .	. .	. .	872	870	75.2	357 19 30.2	. .	− 2.8	48 25 48.6	+ 4.0
13	0 24	6.0	4.0	6.8	7.4	36	. .	. .	. .	902	908	75.2	359 32 36.5	. .	− 0.5	50 38 57.2	+ 3.1
14	355 20	9 28.6	27.2	25.6	28.2	35	. .	. .	. .	014	012	75.2	4 35 58.8	. .	+ 4.8	55 42 24.8	+ 1.5
15	291 52	10 6.2	4.8	5.1	8.1	38	. .	. .	. .	758	762	75.2	68 5 4.1	. .	+ 2 26.7	119 13 52.0	− 4.6
16	289 34	6.5	3.8	3.3	6.5	32	. .	626	. .	570	. .	75.2	70 21 28.5	. .	+ 2 44.7	121 30 34.4	− 4.4
17	283 38	10.8	9.6	9.0	13.5	39	. .	320	. .	326	. .	75.2	76 19 17.1	. .	+ 3 59.7	127 29 38.0	− 4.2
18	286 50	3.0	0.5	29.7	2.9	37	. .	. .	. .	874	870	75.2	73 6 45.9	. .	+ 3 13.5	124 16 20.6	− 4.2
19	333 38	9.0	7.0	6.0	9.9	35	. .	. .	. .	498	492	75.2	26 18 16.5	. .	+ 29.4	77 25 7.1	+ 1.3
20	340 34	1.5	0.0	28.5	2.6	35	. .	772	. .	796	. .	75.2	19 19 40.1	. .	+ 20.9	70 26 22.2	− 2.2
21																	
22	332 34	9 29.1	28.2	26.5	0.5	39	. .	646	. .	660	. .	75.2	27 23 10.3	. .	+ 30.8	78 30 2.3	− 3.3
23	327 16	10 4.8	2.8	2.2	5.7	35	. .	. .	. .	194	184	75.2	32 40 7.6	. .	+ 38.2	83 47 7.0	− 3.8
24	325 46	5.0	2.7	1.3	6.5	33	. .	840	. .	838	. .	75.2	34 9 46.6	. .	+ 40.4	85 16 48.2	− 4.0
25	316 20	2.6	0.3	28.4	3.7	32	. .	. .	. .	640	666	75.2	43 35 26.1	. .	+ 56.6	94 42 43.9	− 4.4
26	316 46	10.0	8.4	8.4	13.8	34	. .	890	. .	880	. .	75.2	43 10 8.8	. .	+ 55.8	94 17 25.8	− 4.5
27	314 50	1.7	0.0	28.6	3.2	34	. .	520	. .	520	. .	75.2	45 5 53.9	. .	+ 59.7	96 13 14.8	− 4.6
28	332 16	4.2	2.9	1.3	5.3	36	820	816	. .	. .	. .	75.2	27 40 31.4	. .	+ 31.2	78 47 23.8	+ 1.1
29	306 50	4.6	3.0	2.6	7.2	34	. .	322	. .	298	. .	75.2	53 5 54.2	. .	+ 1 19.2	104 13 34.6	− 4.6
30	285 18	12.3	10.0	9.0	13.7	31	. .	730	. .	710	. .	75.2	74 37 21.2	. .	+ 3 33.3	125 47 15.7	− 3.3
31																	
32	336 20	5.1	1.9	29.8	4.4	37	. .	804	. .	790	. .	75.2	23 36 46.2	. .	+ 26.1	74 43 33.5	+ 1.7
33	283 28	7.9	5.7	4.5	9.5	34	. .	410	. .	424	. .	75.2	76 27 58.2	. .	+ 4 3.5	127 38 22.9	− 2.1
34	288 28	7.4	6.1	6.6	9.4	32	. .	. .	. .	926	944	75.2	71 27 36.2	39.0	+ 2 56.4	122 36 53.8	− 2.8
35	330 20	9.2	11.0	9.1	11.2	32	. .	231	. .	175	. .	74.3	29 35 26.9	64.8	+ 31.7	80 42 19.8	+ 1.1
36	314 30	0.7	4.6	0.3	1.0	38	790	612	. .	. .	. .	74.3	45 26 57.0	. .	+ 56.4	96 34 14.6	
37	315 2	5.4	9 5	5.5	6.0	37	. .	. .	. .	355	332	74.3	44 54 42.8	67.5	+ 55.3	96 1 59.3	
38	302 24	13.6	15.5	11.5	14.2	38	. .	413	. .	636	. .	74.3	57 33 7.1	71.1	+ 1 26.5	108 40 54.8	+ 3.1
39	312 56	15.5	13.5	12.5	15.0	41	. .	910	. .	908	. .	74.4	46 59 26.4	. .	+ 1 3.5	98 6 51.1	− 0.6
40	358 16	16.0	16.5	14.4	13.2	37	. .	670	. .	628	. .	74.4	1 40 55.4	41.2	+ 1.7	52 47 18.3	+ 3.1
41	345 24	17.7	16.1	15.0	17.5	34	. .	616	. .	614	. .	74.4	14 32 10.4	. .	+ 15.4	65 38 47.0	− 0.4
42	347 38	4.0	5.0	2.5	3.5	32	. .	. .	. .	630	590	74.4	12 17 27.4	. .	+ 12.9	63 24 1.5	− 0.7
43	206 14	11.1	12.0	8.5	7.3	33	. .	282	. .	198	. .	74.4	153 41 42.3	. .	− 29.4	77 25 8.3	+ 2.5
44	293 6	7.4	7.5	4.9	6.6	37	. .	. .	. .	660	611	74.4	66 50 46.6	. .	+ 2 18.0	117 59 25.8	− 4.7
45	327 16	8.5	7.5	5.0	8.2	34	. .	930	. .	890	. .	74.4	32 40 5.5	. .	+ 38.1	83 47 4.8	− 3.8
46	323 52	6.5	5.2	3.9	6.6	39	. .	. .	. .	272	236	74.4	36 5 10.7	. .	+ 43.3	87 12 15.2	− 4.2
47	256 2	7.0	5.6	3.5	3.9	35	. .	828	. .	753	. .	74.4	73 54 16.5	40.0	+ 3 23.3	125 4 1.0	− 4.2
48	295 10	7.7	6.4	4.9	6.9	35	. .	666	. .	575	. .	73.4	64 46 15.4	. .	+ 2 5.7	115 54 42.3	− 4.5
49	289 48	10.0	10.9	7.0	9.5	34	. .	030	. .	980	. .	74.4	70 7 53.5	. .	+ 2 43.4	121 16 58.1	− 4.0
50	342 16	13.9	12.7	11.2	12.1	36	. .	530	. .	490	. .	74.4	17 40 35.3	. .	+ 19.0	68 47 15.5	+ 0.1

No.	Barom.	At. Ther.
	in.	°
8	30.09	46.0
34	30.07	43.0
35	29.58	61.5
37	29.60	64.0
38	29.58	66.7
40	29.98	43.8
47	29.99	42.4

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
10	− 0.2	. .	. .	− 0.2
36	− 6.3	− 16 7.6	. .	− 16 13.9
37	− 6.2	+ 16 7.6	. .	+ 16 1.4

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DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Mar. 4	1	Jupiter I, N. . .	Sk.	. .	. .	30.0	32.0	34.0	36.0	38.3	. .	. .	56 34.06	+ 0.20	. .	+11.50	11 56 45.76	. .
	2	Jupiter II, S. . .	Sk.	24.8	27.3	29.0	. .	. .	. .	45.3	46.8	49.4	56 37.10	+ 0.20	. .	+11.50	11 56 48.80	. .
	3	η Virginis . . .	Sk.	4.7	7.2	8.8	15.0	17.0	19.0	25.2	26.7	29.3	13 16.99	+ 0.22	+11.50	+11.50	12 13 28.71	— 0.02
	4	Moon II . . .	Sk.	8.8	11.3	13.0	19.0	21.2	23.2	29.4	31.0	33.7	30 21.18	+ 0.24	. .	+11.50	12 30 32.92	—60.73
	5	12 Canum Venat. .	Sk.	42.5	45.9	47.7	55.5	. .	0.9	8.8	10.7	14.0	49 58.25	— 0.32	+11.69	+11.50	12 50 9.43	— 0.21
	6	θ Virginis . . .	Sk.	2.5	4.9	6.6	12.8	14.8	16.9	23.0	24.6	27.6	3 14.79	+ 0.29	+11.52	+11.50	13 3 26.58	— 0.16
	7	Polaris, S. P. . .	Sk.	. .	. .	47.0	22.0	55.5	25.0	4.0	. .	. .	10 54.70	+28.46	. .	+11.50	1 11 34.66	— 0.14
	8	α Virginis . . .	Sk.	10.2	12.6	14.1	20.4	. .	24.6	30.9	32.4	34.9	18 22.51	+ 0.35	+11.44	+11.50	13 18 34.36	+ 0.04
7	9	γ^1 Leonis	S.	. .	. .	. .	. .	. .	55.0	59.4	1.1	4.0	12 50.74	— 0.12	+12.19	+12.10	10 13 2.72	— 0.11
	10	Bessel's Zones 64.	S.	36.0	38.7	40.0	. .	. .	. .	56.5	58.0	0.5	22 48.28	— 0.04	. .	+12.10	10 23 0.34	— 1.23
	11	Bessel's Zones 222	S.	. .	. .	. .	18.4	20.6	22.9	27.0	28.6	31.3	34 18.73	+ 0.01	. .	+12.10	10 34 30.84	— 1.17
	12	Polaris, S. P. . .	S.	. .	. .	0.0	35.5	9.0	. .	19.0	. .	. .	11 9.32	+11.47	. .	+12.10	1 11 32.89	— 0.60
	13	ζ Virginis . . .	S.	53.1	55.7	57.3	3.3	5.4	7.4	13.6	15.1	17.6	28 5.39	— 0.01	+12.04	+12.10	13 28 17.48	+ 0.06
	14	B. A. C. 4568 . .	S.	. .	. .	40.9	44.2	48.3	51.8	55.4	. .	. .	35 48.12	— 0.42	. .	+12.10	13 35 59.80	— 2.40
	15	B. A. C. 4605 . .	S.	. .	. .	36.9	40.6	44.1	47.8	51.2	. .	. .	41 44.12	— 0.42	. .	+12.10	13 41 55.80	— 2.33
	16	B. A. C. 4728 . .	S.	51.8	55.4	57.4	5.6	8.4	11.1	19.3	21.5	24.8	9 8.37	— 0.27	. .	+12.10	14 9 20.20	— 1.30
	17	ι Cassiopeæ, S. P. .	S.	. .	. .	37.2	32.5	26.8	21.5	16.6	. .	. .	18 26.92	+ 0.61	. .	+12.10	2 18 39.63	+ 0.29
	18	B. A. C. 4804 . .	S.	. .	. .	58.6	1.7	4.9	8.1	11.3	. .	. .	24 4.92	— 0.36	. .	+12.10	14 24 16.66	— 1.75
	19	B. A. C. 4847[1] . .	S.	24.5	27.1	28.9	35.1	37.3	39.4	45.8	47.2	50.1	34 37.27	— 0.10	. .	+12.10	14 34 49.27	— 0.88
	20	B. A. C. 4847[2] . .	S.	25.1	27.8	29.4	35.7	37.9	40.0	46.4	47.9	50.6	34 37.89	— 0.10	. .	+12.10	14 34 49.89	— 0.88
	21	β Libræ	S.	49.8	52.5	53.9	0.1	2.1	4.3	10.5	11.9	14.6	10 2.19	+ 0.03	+12.01	+12.09	15 10 14.31	+ 0.08
	22	μ^1 Bootis	S.	17.5	20.8	22.6	30.3	32.9	35.3	43.2	45.3	48.3	19 32.91	— 0.24	+12.16	+12.09	15 19 41.76	— 0.08
9	23	α^2 Geminorum . .	E.	8.1	11.2	13.0	20.3	22.6	25.0	32.3	34.2	37.2	26 22.66	— 0.25	+11.93	+11.80	7 26 34.21	+ 0.11
	24	α Canis Minoris .	E.	18.9	21.6	23.0	29.3	31.3	33.3	39.6	41.0	43.7	32 31.30	— 0.14	+11.80	+11.80	7 32 42.06	— 0.16
	25	VII, 7	E.	. .	. .	9.2	11.6	13.9	16.1	18.6	. .	. .	35 13.88	0.00	. .	+11.80	7 35 25.68	— 0.69
	26	ϕ Geminorum . .	E.	22.6	25.5	27.2	34.1	36.4	38.6	45.5	47.2	50.0	45 36.34	— 0.23	+11.86	+11.80	7 45 47.91	— 0.14
	27	λ Ursæ Minoris, S. P.	E.	. .	. .	39.0	50.0	1.5	14.0	. .	. .	. .	49 1.88	+ 9.44	. .	+11.80	19 49 23.12	— 1.11
	28	Anonymous . .	E.	. .	. .	46.5	48.5	50.5	52.9	54.6	. .	. .	32 50.60	— 0.07	. .	+11.79	8 33 2.32	— 0.85
	29	Anonymous . .	E.	1.7	4.0	6.0	12.0	14.0	16.5	22.7	24.6	27.0	33 14.28	— 0.07	. .	+11.79	8 33 26.00	— 0.85
	30	Uranus I, C. . .	E.	42.6	45.3	46.9	. .	. .	. .	4.0	5.8	8.6	37 55.53	— 0.19	. .	+11.79	8 38 7.13	. .
	31	Uranus II . . .	E.	. .	. .	51.4	53.6	55.8	58.0	0.1	. .	. .	37 55.78	— 0.19	. .	+11.79	8 38 7.38	. .
	32	12 Yr.Cat. 1879, S.P.	E.	. .	. .	17.2	6.0	54.0	42.0	29.9	. .	. .	52 53.82	+ 0.89	. .	+11.79	20 53 6.50	+ 0.39
	33	κ Cancri	E.	32.3	36.6	40.6	42.7	44.8	46.9	49.0	53.1	57.4	0 44.82	— 0.16	+11.69	+11.79	9 0 56.45	+ 0.09
	34	Weisse (2), 67 .	E.	59.5	3.0	5.2	13.7	16.7	19.5	28.0	30.1	33.8	5 16.61	— 0.32	. .	+11.79	9 5 28.08	— 1.82
	35	Weisse (2), 137 .	E.	. .	. .	34.1	37.0	39.7	42.6	45.4	. .	. .	8 39.76	— 0.31	. .	+11.79	9 8 51.24	— 1.80
	36	Weisse (2), 334 .	E.	.	. .	24.1	26.7	29.5	32.1	35.0	. .	. .	17 29.48	— 0.29	. .	+11.78	9 17 40.97	— 1.73
	37	Weisse (2), 363 .	E.	25.8	27.7	33.2	36.0	38.7	41.5	44.3	49.7	51.8	18 38.74	— 0.30	. .	+11.78	9 18 50.22	— 1.78
	38	Weisse (2), 592 .	E.	9.0	12.2	14.0	22.0	24.7	27.2	35.0	37.0	40.3	29 24.60	— 0.28	. .	+11.78	9 29 36.10	— 1.73
	39	IX, 4	E.	24.0	26.7	28.6	35.5	37.8	40.3	47.4	49.2	52.1	37 37.96	0.00	. .	+11.78	9 37 49.74	— 1.05
	40	IX, 6	E.	. .	. .	24.7	27.0	29.6	32.3	34.8	. .	. .	40 29.68	+ 0.04	. .	+11.78	9 40 41.50	— 1.08
	41	IX, 7	E.	. .	. .	15.8	18.3	20.6	22.9	25.5	. .	. .	41 20.62	+ 0.01	. .	+11.78	9 41 32.41	— 1.06
	42	IX, 13	E.	. .	. .	54.0	56.7	59.1	1.3	3.7	. .	. .	47 58.96	+ 0.01	. .	+11.78	9 48 10.75	— 1.08
	43	IX, 14	E.	. .	. .	13.7	15.9	18.1	20.6	22.8	. .	. .	50 18.22	— 0.02	. .	+11.78	9 50 29.95	— 1.06
	44	α Leonis	E.	. .	. .	25.1	27.2	29.3	31.4	33.5	. .	. .	1 29.30	— 0.17	+11.76	+11.78	10 1 40.91	— 0.02
	45	X, 2.	E.	55.2	58.4	0.1	7.0	9.2	11.6	18.5	20.4	23.2	10 9.29	0.00	. .	+11.77	10 10 21.06	— 1.10
	46	γ^1 Leonis	E.	38.0	40.9	42.5	49.0	51.3	53.5	0.0	1.7	4.5	12 51.27	— 0.20	+14.74	+11.77	10 12 2.84	+ 0.01
10	47	VII, 8	F.	20.4	23.3	25.1	31.9	34.3	36.7	43.6	45.5	48.4	38 34.36	— 0.26	. .	+11.56	7 38 45.66	— 0.69
	48	λ Ursæ Minoris, S. P.	F.	. .	. .	52.0	56.0	10.0	. .	. .	. .	. .	49 10.70	+ 1.60	. .	+11.56	19 49 23.86	— 1.16
	49	15 Argus	F.	46.8	49.7	51.3	58.0	0.2	2.4	9.2	10.8	13.6	2 0.22	— 0.26	+11.52	+11.56	8 2 1.52	— 0.02

14, 18, 43. Bisections at sets B and D.
28, 29, 41. Wire A used.
32. Bisections at set C.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	323 6	10 10.8	10.1	8.0	11.0	34	. .	. .	. .	598	353	74.4	36 50 1.9	38.2	+ 44.8	87 57 7.9	
2	323 6	10.8	10.1	8.0	11.0	37	625	640	. .	. .	. .	74.4	36 50 49.5	. .	+ 44.8	87 57 55.5	
3	321 6	9.5	7.5	4.5	6.9	38	. .	231	. .	218	. .	74.4	38 50 56.0	. .	+ 48.2	89 58 5.4	− 0.9
4																	
5	0 2	3.9	3.5	1.5	2.3	34	. .	456	. .	424	. .	74.4	359 53 54.1	. .	− 0.1	51 0 15.2	− 0.1
6	316 12	6.2	5.4	4.0	6.6	37	. .	660	. .	645	. .	74.4	43 44 45.7	. .	+ 57.4	94 52 4.3	− 0.4
7	52 22	5.4	3.7	2.5	2.7	32	383	. .	342	. .	335	74.4	307 33 22.4	. .	− 1 18.0	358 38 25.6	− 1.8
8	310 34	5.5	5.5	2.6	4.2	37	. .	. .	. .	780	780	74.4	49 22 46.9	36.2	+ 1 9.9	100 30 18.0	+ 0.4
9	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .		36.0			
10	325 36	9.8	9.5	7.5	11.2	36	. .	. .	. .	390	382	75.3	34 20 31.6	. .	+ 40.6	85 27 33.4	− 4.2
11	316 10	9 26.7	26.5	25.0	28.7	35	. .	. .	. .	500	. .	75.3	43 46 5.0	. .	+ 56.8	94 53 23.0	− 5.7
12	52 22	10 3.7	1.3	1.2	3.2	32	230	. .	. .	. .	186	75.3	307 33 19.8	38.6	− 1 16.7	358 38 24.3	− 2.3
13	321 6	5.2	4.1	2.9	7.5	34	. .	869	. .	853	. .	75.3	38 50 3.3	. .	+ 47.7	89 57 12.2	− 0.6
14	16 22	4.3	5.1	4.2	5.1	38	. .	639	. .	579	. .	75.3	343 35 0.5	. .	− 17.5	34 41 4.2	−16.8
15	16 6	7.7	8.7	6.5	7.6	35	. .	. .	. .	994	962	75.3	343 50 24.2	. .	− 17.2	34 56 28.2	−17.3
16	3 8	0.5	0.7	29.2	1.7	32	. .	320	. .	301	. .	75.3	356 47 20.2	34.5	− 3.3	47 53 38.1	−18.8
17																	
18	11 28	9 28.2	28.5	26.8	29.4	41	260	. .	. .	. .	290	75.3	348 29 34.9	. .	− 12.1	39 35 44.0	−20.4
19																	
20																	
21	312 8	25.2	25.1	24.5	28.3	34	. .	055	. .	053	. .	75.3	47 47 41.8	37.7	+ 1 5.2	98 55 8.2	− 0.6
22	358 52	10 3.5	4.6	2.2	4.5	37	. .	743	. .	765	. .	75.3	1 4 46.7	. .	+ 1.1	52 11 9.0	− 0.2
23	353 12	9 28.5	26.2	26.5	27.0	33	. .	600	. .	570	. .	76.7	6 43 37.5	. .	+ 7.0	57 50 5.7	− 0.1
24	320 36	10 4.0	3.4	2.7	3.7	35	465	445	. .	. .	. .	76.7	33 20 12.1	36.5	+ 39.1	84 27 12.4	− 1.3
25	293 10	2.4	0.7	29.5	1.3	39	. .	. .	. .	545	505	76.7	66 47 12.3	. .	+ 2 17.9	117 55 51.4	− 7.1
26	348 8	9.8	6.9	6.7	9.3	34	. .	020	. .	970	. .	76.7	11 47 54.9	. .	+ 12.4	62 54 28.5	− 0.8
27	52 6	6.1	3.5	5.0	5.0	35	630	615	620	. .	. .	76.7	307 50 16.2	. .	− 1 16.4	358 85 21.0	+ 1.2 − 0.1
28	307 40	9 29.2	29.0	27.7	1.0	35	. .	705	. .	. .	. .	76.7	52 13 38.6	. .	+ 1 16.6	103 21 16.4	
29	307 40	29.2	29.0	27.7	1.0	36	. .	. .	. .	130	115	76.7	52 13 44.4	. .	+ 1 16.6	103 21 22.2	− 4.4
30	340 14	10 5.5	4.3	2.9	4.9	33	. .	670	. .	645	. .	76.7	19 41 45.9	. .	+ 21.3	70 48 28.4	− 4.4
31																	
32	60 56	8.1	3.0	4.2	6.7	33	825	. .	. .	. .	850	76.7	298 59 49.6	. .	− 1 46.9	350 4 23.9	− 0.1
33	332 14	4.8	3.6	3.7	5.0	37	. .	185	. .	155	. .	76.7	27 42 39.5	. .	+ 31.2	78 49 31.9	− 1.4
34	5 22	2.3	1.0	0.5	1.5	30	. .	. .	. .	600	575	76.7	354 32 56.6	. .	− 5.7	45 39 12.1	+ 6.7
35	4 32	2.3	2.2	2.0	2.2	37	. .	. .	. .	045	995	76.7	355 24 35.9	. .	− 4.8	46 30 52.3	+ 6.3
36	1 16	8.3	7.1	7.3	8.1	32	. .	900	. .	. .	. .	76.7	358 39 38.8	. .	− 1.4	49 45 58.6	+ 5.0
37	2 36	2.3	1.7	1.5	2.5	32	. .	725	. .	640	. .	76.7	357 19 28.7	. .	− 2.8	48 25 47.1	+ 5.2
38	359 30	6.6	5.5	5.0	6.4	30	. .	. .	. .	645	625	76.7	0 25 1.8	. .	+ 0.4	51 31 23.4	+ 3.8
39																	
40	285 50	6.7	5.2	3.4	7.0	38	970	950	. .	. .	. .	76.7	74 7 7.4	. .	+ 3 26.2	125 16 54.8	− 6.3
41	290 40	5.3	4.3	2.3	5.4	38	. .	. .	. .	980	970	76.7	69 14 33.0	. .	+ 2 35.7	120 23 29.9	− 6.1
42	289 34	4.1	2.8	1.0	4.1	32	. .	. .	. .	680	600	76.7	70 21 28.9	. .	+ 2 45.2	121 30 35.3	− 6.1
43	296 36	4.2	3.2	1.9	4.2	37	. .	565	. .	550	. .	76.7	63 20 44.4	. .	+ 1 58.0	114 29 3.6	− 5.8
44	333 38	9.5	7.8	7.1	9.3	35	330	300	. .	. .	. .	76.7	26 18 15.0	35.5	+ 29.4	77 25 5.6	− 0.1
45	293 6	8.9	6.0	6.2	7.5	37	. .	590	. .	420	. .	76.7	66 50 47.3	. .	+ 2 18.2	117 59 26.7	− 5.8
46	341 32	6.3	4.5	4.2	6.6	37	. .	080	. .	050	. .	76.7	18 24 39.1	. .	+ 20.0	69 31 20.3	+ 0.3
47	292 26	3.9	1.1	1.3	4.6	37	. .	. .	. .	415	425	75.1	67 30 40.2	41.0	+ 2 20.9	118 39 22.3	− 7.3
48	52 6	3.2	0.3	1.3	1.9	35	830	832	834	. .	. .	75.1	307 50 14.5	. .	− 1 15.5	358 55 20.2	+ 0.4
1	297 8	13.0	10.6	9.0	13.6	35	. .	788	. .	806	. .	75.1	62 48 23.9	. .	+ 1 53.8	113 56 38.9	+ 0.8

No.	Barom.	At. Ther.
	in.	°
1	30.04	41.2
5	30.05	39.8
11	29.73	40.0
18	29.70	39.0
22	29.71	39.0
24	29.76	37.0
41	29.72	36.0
47	29.66	42.5

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
1	− 1.2	+ 23.8	. .	+ 22.6
2	− 1.2	− 23.8	. .	− 25.0
30	− 0.2	. .	. .	− 0.2

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
													m. s.	s.	s.	s.	h. m. s.	s.
1874. Mar. 10	1	κ Cancri	F.	32.7	35.3	36.8	43.0	45.1	47.2	53.5	54.9	57.6	0 45.12	− 0.30	+11.53	+11.55	9 0 56.37	+ 0.01
	2	Weisse (2), 137	F.	23.0	26.5	28.6	37.0	39.8	42.6	51.0	53.1	56.7	8 39.81	− 0.33	. .	+11.55	9 8 51.03	− 1.79
	3	Weisse (2), 334	F.	13.6	16.9	18.9	26.9	29.5	32.1	40.2	42.3	45.7	17 29.57	− 0.32	. .	+11.55	9 17 40.80	− 1.72
	4	Bonn. VI+39°, 2260	F.	29.7	33.1	35.0	42.9	45.6	48.1	56.4	58.2	1.5	25 45.61	− 0.32	. .	+11.55	9 25 56.84	− 1.73
	5	Anonymous	F.	13.5	16.6	18.5	25.8	28.1	30.7	37.9	39.9	42.8	38 28.20	− 0.25	. .	+11.55	9 38 39.50	− 1.06
	6	IX, 11	F.	5.1	8.3	10.0	17.0	19.4	21.7	28.7	30.4	33.4	44 19.33	− 0.26	. .	+11.55	9 44 30.62	− 1.09
	7	IX, 16	F.	31.3	34.4	36.3	43.6	46.3	48.6	56.0	57.7	0.9	59 46.12	− 0.25	. .	+11.54	9 59 57.41	− 1.11
	8	a Leonis	F.	. .	. .	25.4	27.6	29.7	31.8	33.8	. .	. .	1 29.66	− 0.30	+11.53	+11.54	10 1 40.90	− 0.03
	9	X, 1	F.	8.9	10.7	16.2	19.0	21.5	24.1	26.8	32.0	34.0	6 21.47	− 0.24	. .	+11.54	10 6 32.77	− 1.16
	10	Weisse 208	F.	14.1	16.9	18.4	24.6	26.8	28.8	35.0	36.6	39.2	13 26.71	− 0.30	. .	+11.54	10 13 37.95	− 1.30
	11	Bessel's Zones 64	F.	36.8	39.4	40.9	47.0	49.1	51.1	57.1	58.7	1.3	22 49.04	− 0.30	. .	+11.54	10 23 0.28	− 1.24
	12	Weisse 560	F.	59.0	1.6	3.1	9.2	11.2	13.3	19.5	20.9	23.5	32 11.26	− 0.28	. .	+11.54	10 32 22.52	− 1.18
	13	Weisse 638	F.	18.3	21.0	22.5	28.7	30.7	32.7	38.9	40.4	42.9	36 30.68	− 0.28	. .	+11.54	10 36 41.94	− 1.17
	14	l Leonis	F.	15.6	18.2	19.8	26.0	28.0	30.1	36.3	37.9	40.5	42 28.04	− 0.30	+11.57	+11.54	10 42 39.28	− 0.03
	15	X, 17	F.	. .	. .	52.1	54.6	57.2	59.6	2.1	. .	. .	47 57.12	− 0.25	. .	+11.53	10 48 8.40	− 1.16
	16	XI, 1	F.	32.5	35.2	37.0	43.8	46.0	48.2	55.0	56.7	59.6	3 46.00	− 0.26	. .	+11.53	11 3 57.27	− 1.12
	17	XI, 2	F.	9.7	13.0	14.7	22.0	24.7	27.0	34.6	36.3	39.6	11 24.62	− 0.25	. .	+11.53	11 11 35.90	− 1.15
	18	ν Leonis	F.	7.7	10.2	11.7	17.8	19.9	22.0	28.0	29.5	32.0	30 19.87	− 0.29	+11.50	+11.53	11 30 31.11	− 0.01
	19	XI, 11	F.	17.6	20.4	21.8	29.2	31.4	33.8	40.9	42.6	45.6	40 31.48	− 0.26	. .	+11.53	11 40 42.75	− 1.12
	20	β Leonis	F.	15.3	18.0	19.5	25.9	28.0	30.2	36.6	38.0	40.8	42 28.03	− 0.30	+11.56	+11.53	11 42 39.26	− 0.05
	21	Jupiter I, S.	F.	. .	. .	. .	. .	50.3	52.2	54.3	. .	. .	53 50.22	− 0.29	. .	+11.53	11 54 1.46	. .
	22	Jupiter II, N.	F.	. .	. .	. .	. .	. .	. .	1.4	3.0	5.5	53 53.25	− 0.29	. .	+11.53	11 54 4.49	. .
	23	o Virginis	F.	25.0	27.7	29.2	35.4	37.5	39.5	45.8	47.3	49.9	58 37.48	− 0.30	+11.57	+11.53	11 58 48.71	− 0.06
	24	d Herculis	S.	31.6	34.8	36.5	43.9	46.3	48.8	56.1	57.9	1.1	56 46.33	− 0.30	. .	+11.52	16 56 57.55	+ 0.20
	25	44 Ophiuchi	S.	16.0	18.7	20.4	27.0	29.3	31.5	38.3	39.9	42.8	18 29.32	− 0.36	+11.59	+11.51	17 18 40.47	− 0.05
	26	Moon II, S.	S.	59.0	2.0	3.8	10.9	13.4	15.8	22.8	24.4	27.6	23 13.30	− 0.36	. .	+11.51	17 23 24.45	−71.77
	27	γ^2 Sagittarii	S.	17.2	20.2	22.2	28.9	31.3	33.6	40.9	42.6	45.5	57 31.38	− 0.36	+11.59	+11.50	17 57 42.52	− 0.08
	28	μ^1 Sagittarii	S.	49.0	51.8	53.5	0.1	2.3	4.4	11.0	12.6	15.5	6 2.24	− 0.36	+11.52	+11.50	18 6 13.38	− 0.02
	29	δ Ursæ Minoris	S.	. .	. .	30.9	6.7	40.3	14.8	49.7	. .	. .	12 40.48	+ 1.21	. .	+11.50	18 12 53.19	− 0.31
	30	1 Aquilæ	S.	57.2	59.7	1.2	7.4	9.5	11.6	47.8	49.3	51.9	28 9.51	− 0.34	+11.48	+11.50	18 28 20.67	+ 0.09
	31	51 Cephei, S. P.	S.	. .	. .	10.7	28.7	46.3	3.7	19.3	. .	. .	40 45.74	− 2.31	. .	+11.50	6 40 54.93	+ 0.09
11	32	Sun I, S.	S.	25.5	27.9	29.5	35.7	37.6	39.7	45.9	47.4	50.1	25 37.70	− 0.26	. .	+11.42	23 25 48.86	. .
	33	Sun II, N.	S.	35.0	37.8	39.2	45.3	47.3	49.3	55.6	57.2	59.7	27 47.38	− 0.26	. .	+11.42	23 27 58.54	. .
	34	β Arietis	S.	15.7	18.4	20.0	26.5	28.8	30.9	37.5	39.0	41.9	47 28.74	− 0.30	+11.26	+11.38	1 47 39.82	+ 0.14
	35	α Arietis	S.	38.9	41.6	43.4	50.0	52.2	54.4	1.0	2.6	5.5	59 52.18	− 0.31	+11.31	+11.38	2 0 3.25	+ 0.08
	36	ε Canis Majoris	E.	16.0	19.0	20.8	27.8	30.2	32.8	39.6	41.2	44.3	53 30.19	− 0.18	+10.94	+11.05	6 53 41.06	+ 0.06
	37	δ Canis Majoris	E.	52.0	55.2	56.8	1.3	5.9	10.5	14.9	16.7	19.6	3 5.88	− 0.19	+10.93	+11.05	7 3 16.74	+ 0.07
	38	δ Geminorum	E.	12.4	15.3	17.0	23.5	25.7	27.9	34.5	36.2	39.0	12 25.72	− 0.29	+11.03	+11.04	7 12 36.47	− 0.05
	39	α^2 Geminorum	E.	9.1	12.0	14.0	21.0	23.5	25.9	33.1	35.0	38.0	26 23.51	− 0.31	+11.11	+11.04	7 26 34.24	+ 0.17
	40	α Canis Minoris	E.	19.7	22.3	23.9	28.0	30.0	32.1	34.1	36.3	. .	32 32.08	− 0.25	+11.10	+11.04	7 32 42.87	+ 0.22
	41	β Geminorum	E.	12.2	15.2	16.9	23.9	26.3	28.6	35.6	37.3	40.3	37 26.26	− 0.30	+11.12	+11.04	7 37 37.00	− 0.11
	42	φ Geminorum	E.	23.3	26.3	28.0	34.9	37.2	39.6	46.3	48.1	51.1	45 37.20	− 0.30	+11.04	+11.03	7 45 47.93	− 0.09
	43	λ Ursæ Minoris, S. P.	E.	1.5	46.0	25.0	. .	10.0	. .	. .	. .	. .	49 9.88	+ 3.73	. .	+11.03	19 49 24.64	− 1.15
	44	Uranus I, C.	S.	29.4	32.0	33.8	. .	. .	. .	51.1	52.8	55.5	37 42.43	− 0.28	. .	+11.05	8 37 53.20	. .
	45	Uranus II	S.	. .	. .	38.6	40.7	42.9	45.0	47.3	. .	. .	37 42.90	− 0.28	. .	+11.05	8 37 53.67	. .
	46	κ Cancri	S.	33.0	35.7	37.2	43.4	45.6	47.7	53.9	55.4	58.0	0 45.54	− 0.26	+11.06	+11.04	9 0 56.32	− 0.03
	47	Weisse (2), 137	S.	23.4	26.8	29.0	37.5	40.2	43.1	51.4	53.6	57.0	8 40.22	− 0.33	. .	+11.04	9 8 50.93	− 1.78
	48	Weisse (2), 334	S.	14.0	17.2	19.2	27.2	30.0	32.6	40.7	42.6	46.0	17 29.94	− 0.32	. .	+11.03	9 17 40.65	− 1.72
	49	Armagh 2101	S.	. .	. .	57.3	0.0	2.7	5.4	8.0	. .	. .	27 2.68	− 0.32	. .	+11.03	9 27 13.39	− 1.76

19, 27. Bisections at sets B and D.
49. Bisections at wires II and B_1.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	332 14	10 4.7	2.1	2.3	5.1	37	. .	480	. .	450	. .	75.1	27 42 41.6	. .	+ 30.9	78 49 33.7	+ 0.4
2	4 32	7.7	6.5	6.0	8.2	36	808	800	. .	. .	. .	75.1	355 24 35.2	40.5	— 4.7	46 30 51.7	+ 6.5
3	1 16	7.6	5.4	6.3	6.7	33	. .	148	. .	150	. .	75.1	358 39 38.7	. .	1.4	49 45 58.5	+ 5.1
4	0 24	10.0	8.2	10.8	10.8	36	. .	600	. .	620	. .	75.1	359 32 35.2	. .	— 0.5	50 38 55.9	+ 4.3
5	288 10	7.7	6.6	4.5	9.0	34	. .	796	. .	788	. .	75.1	71 46 3.9	. .	+ 2 56.6	122 55 21.7	— 6.5
6	291 46	9.6	6.5	6.0	8.8	35	. .	. .	. .	280	310	75.1	68 10 12.6	. .	+ 2 25.9	119 18 59.7	— 5.7
7	286 50	2.5	0.7	29.3	2.4	38	076	070	. .	. .	. .	75.1	73 6 47.8	. .	+ 3 11.4	124 16 20.4	— 6.2
8																	
9	280 52	11.8	8.5	7.5	10.4	34	. .	520	. .	494	. .	75.1	79 4 2.0	. .	+ 4 55.8	130 15 19.0	— 6.1
10	332 34	1.9	0.3	28.9	3.3	39	510	496	. .	. .	. .	75.1	27 23 10.1	. .	+ 30.5	78 30 1.8	— 3.2
11	325 36	6.5	4.6	4.3	7.1	36	. .	690	. .	676	. .	75.1	34 20 31.7	. .	+ 40.2	85 27 33.1	— 4.4
12	316 46	3.7	1.0	1.0	5.3	35	330	324	. .	. .	. .	75.1	43 10 7.7	. .	+ 55.2	94 17 24.1	— 5.3
13	314 50	5.8	3.1	2.2	5.2	34	. .	310	. .	292	. .	75.1	45 5 53.6	. .	+ 59.1	96 13 13.9	— 5.5
14	332 16	7.5	5.4	5.1	7.5	36	. .	578	. .	560	. .	75.1	27 40 30.8	. .	+ 30.9	78 47 22.9	+ 0.2
15	285 18	0.5	26.7	26.1	0.3	32	. .	. .	. .	840	850	75.1	74 37 25.7	38.8	+ 3 31.2	125 47 18.1	— 5.4
16	296 8	7.3	3.8	2.3	7.0	31	. .	406	. .	410	. .	75.1	63 47 10.2	. .	+ 1 59.3	114 55 30.7	— 5.8
17	287 4	5.4	3.7	3.0	5.5	40	. .	606	. .	480	. .	75.1	72 53 29.4	. .	+ 3 9.5	124 3 0.1	— 5.2
18	320 56	0.9	28.1	27.8	1.9	37	. .	430	. .	426	. .	75.1	39 0 37.2	. .	+ 47.9	90 7 46.3	— 1.6
19	291 16	3.6	1.1	1.1	3.6	31	910	. .	. .	. .	892	75.1	68 39 15.1	. .	+ 2 30.3	119 48 6.6	— 5.3
20	336 20	9 29.5	26.9	25.2	0.0	37	. .	. .	. .	965	000	75.1	23 36 44.4	. .	+ 25.9	74 43 31.5	— 0.1
21	323 24	10 5.1	1.3	1.0	5.3	36	. .	. .	. .	290	. .	75.1	36 32 23.5	. .	+ 43.9	87 39 28.6	
22	323 24	5.1	1.3	1.0	5.3	33	. .	. .	. .	. .	410	75.1	36 31 39.6	. .	+ 43.8	87 38 44.6	
23	330 28	9 28.6	25.6	26.4	29.1	32	. .	. .	. .	040	050	75.1	29 27 12.9	36.9	+ 33.5	80 34 7.6	— 1.5
24	354 48	27.7	27.0	25.0	28.3	38	. .	410	. .	340	. .	74.9	5 8 49.0	32.7	+ 5.4	56 15 15.6	— 0.2
25	297 2	10 4.1	1.5	1.0	6.0	39	. .	630	. .	600	. .	74.9	62 55 13.8	33.0	+ 1 56.3	114 3 31.3	+ 0.8
26	293 8	9 27.3	26.6	25.3	29.2	35	285	. .	355	. .	360	74.9	66 48 2.3	32.7	+ 2 18.7	117 56 42.2	
27	290 40	10 1.1	0.5	27.3	3.1	36	. .	890	. .	810	. .	74.9	69 16 28.8	. .	+ 2 37.0	120 25 27.0	— 1.6
28	299 58	9 26.5	25.8	23.6	28.8	32	. .	900	. .	890	. .	74.9	59 57 24.0	32.6	+ 1 43.1	111 5 28.3	— 1.8
29	47 38	26.9	25.3	23.1	26.9	38	020	010	037	. .	. .	74.9	312 18 42.0	. .	— 1 5.7	3 23 57.5	— 2.6
30	312 44	10 2.9	2.5	0.2	5.0	37	. .	004	. .	914	. .	74.9	47 12 32.7	. .	+ 1 4.5	98 19 58.4	— 2.2
31	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .		33.8			
32	317 12	9 28.8	28.3	26.5	29.5	32	920	970	. .	. .	. .	74.2	42 43 25.4	40.2	+ 54.4	93 50 41.0	
33	317 44	10 0.9	1.3	0.0	2.7	31	. .	. .	696	658	. .	74.2	42 11 10.6	. .	+ 53.3	93 18 25.1	
34	341 14	4.1	2.0	3.3	7.7	34	. .	074	. .	070	. .	74.2	18 41 49.6	. .	+ 19.8	69 48 30.6	— 0.5
35	343 54	3.8	3.3	0.6	5.4	32	. .	528	. .	496	. .	74.2	16 1 24.8	44.6	+ 16.8	67 8 2.8	+ 0.6
36	292 16	8.5	5.5	6.3	7.8	32	. .	680	. .	590	. .	74.9	67 39 30.8	36.5	+ 2 23.4	118 48 15.4	+ 0.6
37	294 54	4.5	1.5	1.8	4.8	39	. .	970	. .	950	. .	74.9	65 3 19.1	. .	+ 2 6.8	116 11 47.1	+ 1.0
38	343 16	9.8	8.5	5.8	8.7	36	. .	385	. .	325	. .	74.9	16 40 29.2	. .	+ 17.8	67 47 8.2	— 0.8
39	353 12	7.3	5.5	4.3	5.5	33	. .	070	. .	990	. .	74.9	6 43 35.8	. .	+ 7.0	57 50 4.0	— 1.7
40	326 36	4.0	2.8	2.1	3.8	35	. .	630	. .	600	. .	74.9	33 20 12.8	. .	+ 39.0	84 27 13.0	— 0.7
41	349 22	2.8	1.3	0.4	2.3	33	. .	360	. .	310	. .	74.9	10 33 36.5	. .	+ 11.1	61 40 8.8	— 0.5
42	348 8	9.7	7.4	5.8	9.4	34	. .	105	. .	045	. .	74.9	11 47 54.2	. .	+ 12.4	62 54 27.8	— 1.4
43	52 6	6.0	4.7	5.3	7.7	35	630	610	580	. .	. .	74.9	307 50 15.1	. .	— 1 16.3	358 55 20.0	+ 0.5
44	340 16	8.2	9.1	5.9	9.6	38	. .	073	. .	080	. .	74.9	19 40 55.6	35.0	+ 21.3	70 47 38.1	
45																	
46	332 14	9 27.9	27.8	26.9	1.5	37	. .	676	. .	710	. .	74.9	27 42 40.0	. .	+ 31.3	78 49 32.5	— 0.8
47	4 32	10 1.0	1.0	29.6	3.5	37	147	183	. .	. .	. .	74.9	355 24 34.7	. .	— 4.8	46 30 51.1	+ 6.6
48	1 16	10.1	8.4	8.0	10.2	33	. .	000	. .	980	. .	74.9	358 39 38.8	. .	— 1.4	49 45 58.6	+ 5.3
49	1 14	6.4	3.9	2.6	5.7	37	875	875	. .	. .	. .	74.9	358 42 48.8	. .	— 1.3	49 49 8.7	+ 4.6

No.	Barom.	At. Ther.
	in.	°
2	29.66	42.0
15	29.65	40.0
23	29.68	38.5
24	29.68	33.5
31	29.73	33.5
32	29.70	40.6
35	29.68	43.0
36	29.73	38.0
46	29.73	36.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	° ′ ″
21	— 1.2	— 22.0	. .	— 23.2
22	— 1.2	+ 22.0	. .	+ 20.8
26	—51 39.5	— 15 22.9	. .	— 1 7 2.4
32	— 5.9	— 16 7.9	. .	— 16 13.8
33	— 5.8	+ 16 7.9	. .	+ 16 2.1
44	— 0.2	. .	. .	— 0.2

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Mar. 11	1	Weisse (2), 584 .	S.	52.0	55.3	57.3	5.2	7.9	10.4	18.3	20.3	23.5	29 7.80	− 0.32	. .	+11.03	9 29 18.41	− 1.71
	2	Weisse (2), 28 . .	S.	15.0	17.9	19.4	26.0	28.1	30.2	36.8	38.4	41.2	3 28 11	− 0.28	. .	+11.02	10 3 38.90	− 1.39
	3	X, 3.	S.	. .	. .	53.6	56.0	58.6	1.2	6.2	8.3	10.3	12 56.02	− 0.16	. .	+11.01	10 13 6.87	− 1.13
	4	Weisse 338 . .	S.	26.4	28.8	30.2	36.5	38.5	40.5	46.6	48.3	50.8	20 38.51	− 0.25	. .	+11.01	10 20 49.27	− 1.24
	5	Anonymous . .	S.	. .	. .	18.3	20.4	22.4	24.5	26.6	. .	. .	22 22.44	− 0.25	. .	+11.01	10 22 33.20	− 1.24
	6	Anonymous . .	S.	14.0	16.7	18.4	. .	. .	. .	34.9	36.4	39.0	35 26.57	− 0.23	. .	+11.01	10 35 37.35	− 1.16
	7	α Ursæ Majoris (R.).	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .		. .
	8	δ Leonis . . .	S.	1.9	4.7	6.2	12.8	15.0	17.2	23.8	25.4	28.3	7 15.03	− 0.28	+11.07	+11.00	11 7 25.75	− 0.13
	9	δ Crateris . . .	S.	40.4	43.0	44.5	50.9	53.0	55.1	1.5	3.1	5.6	12 53.01	− 0.22	+10.90	+10.99	11 13 3.78	+ 0.07
12	10	51 Cephei . . .	E.	. .	. .	24.0	. .	45.0	26.5	36.5	5.0	. .	40 45.00	+ 0.50	. .	+10.72	6 40 56.22	+ 1.90
	11	α^2 Geminorum . .	E.	9.4	12.4	14.3	21.4	23.8	26.2	33.5	35.2	38.4	26 23.84	− 0.30	+10.75	+10.70	7 26 34.24	+ 0.19
	12	α Canis Minoris. .	E.	22.8	24.4	28.5	30.5	32.6	34.6	36.7	40.7	42.4	32 32.58	− 0.30	+10.64	+10.70	7 32 42.98	− 0.10
	13	β Geminorum . .	E.	12.6	15.6	17.5	24.4	26.7	29.0	36.0	37.8	40.6	37 26.69	− 0.29	+10.66	+10.70	7 37 37.10	+ 0.01
	14	ϕ Geminorum . .	E.	23.7	26.6	28.4	35.2	37.5	39.9	46.7	48.5	51.4	45 37.54	− 0.29	+10.68	+10.69	7 45 47.94	− 0.07
	15	Anonymous . .	E.	39.5	42.0	43.7	47.5	49.8	52.1	. .	. .	. .	32 51.98	− 0.30	. .	+10.68	8 33 2.36	− 0.85
	16	Anonymous . .	E.	. .	. .	. .	13.5	15.4	17.6	19.8	24.0	25.8	33 15.58	− 0.30	. .	+10.68	8 33 25.96	− 0.85
	17	Uranus I, C. . .	E.	. .	. .	. .	34.2	36.3	38.5	40.6	. .	. .	37 36.31	− 0.30	. .	+10.68	8 37 40.69	. .
	18	Uranus II . . .	E.	. .	. .	. .	. .	. .	. .	45.3	47.0	49.7	37 36.70	− 0.30	. .	+10.68	8 37 47.08	. .
	19	ϵ Hydræ . . .	E.	. .	. .	. .	56.7	58.8	0.8	4.9	6.5	9.0	39 56.70	− 0.30	+10.73	+10.67	8 40 7.07	− 0.10
13	20	δ Canis Majoris. .	E.	53.1	56.3	57.9	4.6	6.9	9.3	16.0	17.7	20.6	3 6.93	− 0.44	+10.09	+10.06	7 3 16.55	− 0.08
	21	δ Geminorum . .	E.	13.3	16.0	17.8	24.4	26.6	28.8	35.4	37.2	39.9	12 26.60	− 0.26	+10.09	+10.06	7 12 36.40	− 0.09
	22	α^2 Geminorum . .	E.	10.0	12.9	14.8	19.7	22.0	27.0	34.0	35.9	38.9	26 24.44	− 0.21	+10.05	+10.05	7 26 34.28	+ 0.24
	23	α Canis Minoris .	E.	. .	29.1	31.1	33.3	35.3	37.4	41.5	43.0	45.5	32 33.27	− 0.33	+ 9.96	+10.05	7 32 42.99	− 0.07
	24	β Geminorum . .	E.	. .	22.5	24.9	27.2	29.5	31.9	36.6	38.3	41.1	37 27.22	− 2.23	+10.06	+10.05	7 37 37.04	− 0.04
	25	ϕ Geminorum . .	E.	27.3	29.0	33.5	35.8	38.1	40.3	42.8	47.4	49.0	45 38.13	− 0.24	+10.02	+10.04	7 45 47.93	− 0.06
	26	λ Ursæ Minoris, S. P.	E.	23.0	8.0	46.0	10.0	19.0	28.5	43.5	. .	. .	49 31.23	−14.75	. .	+10.04	19 49 26.52	− 0.80
	27	15 Argus	E.	. .	57.2	59.6	1.8	4.0	6.4	10.8	12.4	15.4	2 1.81	− 0.43	+10.05	+10.04	8 2 11.42	− 0.07
14	28	Sun I, S. . . .	Sk.	27.3	29.9	31.7	37.6	39.6	41.8	48.0	49.5	52.3	36 39.71	− 0.58	. .	+ 9.83	23 36 48.96	. .
	29	Sun II, N. . . .	Sk.	36.6	39.3	40.7	46.9	48.9	51.0	57.4	58.8	1.3	38 48.99	− 0.58	. .	+ 9.83	23 38 58.24	. .
	30	Polaris	Sk.	. .	. .	15.0	43.0	5.0	33.5	0.0	. .	. .	11 7.30	+12.97	. .	+ 9.81	1 11 30.08	− 0.77
	31	α Arietis	Sk.	43.4	44.9	49.3	51.4	53.9	56.0	58.4	2.8	4.4	59 53.83	− 0.44	+ 9.77	+ 9.79	2 0 3.18	+ 0.03
	32	δ Ursæ Minoris, S. P.	E.	. .	. .	58.5	22.0	49.5	15.0	40.0	. .	. .	12 49.00	− 4.81	. .	+ 9.50	18 12 54.69	+ 0.03
	33	μ Geminorum . .	E.	58.1	0.9	2.5	8.9	11.3	13.5	20.2	21.9	24.7	15 11.33	− 0.36	+ 9.54	+ 9.50	6 15 20.47	− 0.08
	34	γ Geminorum . .	E.	4.7	7.0	8.7	15.1	17.2	19.3	25.7	27.3	30.0	30 17.22	− 0.39	+ 9.47	+ 9.49	6 30 26.32	− 0.01
	35	51 Cephei . . .	E.	23.5	18.0	49.5	56.5	38.5	20.5	28.0	0.0	53.5	40 38.67	+ 4.82	. .	+ 9.49	6 40 52.98	− 0.60
	36	ϵ Canis Majoris. .	E.	18.0	20.9	22.6	29.7	32.0	34.3	41.4	43.0	46.0	53 31.99	− 0.57	+ 9.47	+ 9.48	6 53 40.90	− 0.04
	37	δ Canis Majoris. .	E.	54.0	56.9	58.7	5.3	7.6	9.9	16.8	18.5	21.4	3 7.68	− 0.56	+ 9.44	+ 9.48	7 3 16.60	− 0.01
	38	δ Geminorum . .	E.	14.0	16.8	18.5	25.0	27.2	29.4	36.0	37.8	40.6	12 27.26	− 0.36	+ 9.51	+ 9.48	7 12 36.35	− 0.09
	39	α^2 Geminorum . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	40	α Canis Minoris .	E.	21.6	24.1	25.7	31.9	33.9	36.0	42.0	43.6	46.2	32 33.89	− 0.43	+ 9.43	+ 9.47	7 32 42.93	− 0.12
	41	Anonymous . .	E.	. .	. .	57.0	59.5	2.0	4.4	6.8	. .	. .	36 1.94	− 0.30	. .	+ 9.47	7 36 11.11	− 0.90
	42	β Geminorum . .	E.	13.9	16.9	18.6	25.6	27.9	30.1	37.2	38.9	41.8	37 27.88	− 0.33	+ 9.48	+ 9.47	7 37 37.02	− 0.04
	43	ϕ Geminorum . .	Sk.	24.8	27.5	29.2	33.8	38.7	43.2	47.6	49.4	52.3	45 38.50	− 0.38	+ 9.78	+ 9.70	7 45 47.82	− 0.16
	44	λ Ursæ Minoris, S. P.	Sk.	. .	. .	14.5	25.0	36.5	45.0	. .	. .	. .	49 36.00	−19.21	. .	+ 9.70	19 49 26.49	− 1.65
19	45	ϕ Geminorum . .	E.	. .	. .	. .	39.2	41.6	43.8	48.4	50.0	52.9	45 39.21	− 0.37	+ 8.97	+ 8.99	7 45 47.83	− 0.06
	46	λ Ursæ Minoris, S. P.	E.	34.0	16.0	59.0	19.0	34.0	47.0	. .	. .	. .	48 43.45	+39.63	. .	+ 8.99	19 49 32.07	− 1.11
	47	15 Argus	E.	48.9	51.4	53.2	59.8	2.1	4.4	11.1	12.8	15.5	2 2.13	+ 0.27	+ 8.97	+ 8.99	8 2 11.39	0.00
	48	Uranus I, C. . .	E.	43.5	46.4	48.0	. .	. .	. .	5.2	6.7	9.6	36 56.57	− 0.26	. .	+ 8.90	8 37 5.30	. .
	49	Uranus II . . .	E.	. .	. .	52.6	54.8	56.9	59.1	1.3	. .	. .	36 56.94	− 0.26	. .	+ 8.99	8 37 5.67	. .
	50	ϵ Hydræ . . .	E.	45.8	48.4	50.0	56.0	58.2	0.3	6.5	8.0	10.8	39 58.22	− 0.10	+ 8.93	+ 8.99	8 40 7.11	+ 0.02

7. Bisections at wires V–VII.
15, 16. Wire A used.
35, 41. Bisections at sets B and D.
46. Bisections at wires B_1 and C_1.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	359 24	10 4.1	3.3	1.5	5.0	34	. .	. .	. .	592	562	74.9	0 31 57.9	. .	+ 0.6	51 38 19.7	+ 4.0
2	340 34	1.4	0.6	28.7	3.2	34	. .	183	. .	159	. .	74.9	19 21 48.6	. .	+ 21.0	70 28 30.8	— 1.6
3	284 56	6.4	5.0	2.9	7.9	36	. .	. .	. .	770	744	74.9	75 0 32.6	32.6	+ 3 40.1	126 10 33.9	— 6.3
4	325 44	4.5	4.4	2.1	6.7	34	. .	084	. .	078	. .	74.9	34 11 50.5	. .	+ 40.7	85 18 52.4	— 4.3
5	325 44	4.5	4.4	2.1	6.7	35	. .	. .	. .	830	820	74.9	34 9 44.5	. .	+ 40.6	85 16 46.2	— 4.3
6	314 38	9 26.8	26.4	24.1	29.3	37	. .	156	. .	170	. .	74.9	45 18 29.9	31.5	+ 1 0.6	96 25 51.7	— 5.6
7	156 24	28.3	27.9	25.3	29.3	34	. .	. .	230	247	314	74.9	203 31 46.1	. .	+ 26.1	27 34 9.0	— 0.6
8	342 16	10 8.5	6.7	4.7	9.6	36	. .	710	. .	650	. .	74.9	17 40 33.4	31.0	+ 19.1	68 47 13.7	— 1.4
9	306 58	9 25.9	24.1	22.1	28.5	36	. .	. .	. .	052	046	74.9	52 58 11.6	30.6	+ 1 19.5	104 5 52.3	— 2.3
10	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .		33.0			
11	353 12	10 2.5	28.8	28.8	29.8	33	. .	. .	. .	340	330	75.2	6 43 35.6	. .	+ 7.1	57 50 3.9	— 1.7
12	326 36	4.7	2.0	2.3	4.6	35	. .	490	. .	500	. .	75.2	33 20 11.5	. .	+ 39.4	84 27 12.1	— 1.6
13	349 22	6.7	4.3	3.4	5.5	33	. .	025	. .	000	. .	75.2	10 33 35.2	. .	+ 11.2	61 40 7.6	— 1.6
14	348 8	9.2	6.4	6.4	9.5	34	. .	150	. .	100	. .	75.2	11 47 55.1	. .	+ 12.5	62 54 28.8	— 0.3
15	307 40	2.2	0.8	29.7	3.5	35	575	540	. .	. .	. .	75.2	52 13 37.1	. .	+ 1 17.6	103 21 15.9	— 4.7
16	307 40	2.2	0.8	29.7	3.5	35	. .	. .	. .	920	830	75.2	52 13 42.4	. .	+ 1 17.6	103 21 21.2	— 4.7
17	340 16	14.5	12.2	11.4	14.5	36	. .	. .	. .	130	120	75.2	19 40 31.4	. .	+ 21.6	70 47 14.2	
18																	
19	327 56	10.6	8.2	8.0	10.8	35	. .	. .	. .	260	200	75.2	32 0 15.8	29.0	+ 37.7	83 7 12.7	— 0.2
20	294 54	0.5	27.0	27.9	0.3	39	. .	950	. .	900	. .	75.4	65 3 14.8	28.0	+ 2 10.3	116 11 46.3	0.0
21	343 16	2.7	1.0	29.2	2.7	36	. .	745	. .	715	. .	75.4	16 40 28.7	. .	+ 18.3	67 47 8.2	— 0.7
22	353 12	9 27.0	23.8	24.3	25.0	33	. .	700	. .	665	. .	75.4	6 43 37.2	. .	+ 7.2	57 50 5.6	0.0
23	326 36	10 6.5	4.1	5.0	6.8	35	. .	310	. .	300	. .	75.4	33 20 11.0	. .	+ 40.2	84 27 12.4	— 1.3
24	349 22	0.5	28.0	26.9	29.5	33	. .	. .	. .	450	440	75.4	10 33 36.2	. .	+ 11.4	61 40 8.8	— 0.4
25	348 8	9.0	5.5	5.3	8.0	34	075	065	. .	. .	. .	75.4	11 47 53.3	. .	+ 12.8	62 54 27.3	— 1.8
26	52 6	4.3	0.8	2.3	2.3	35	820	. .	840	. .	. .	75.4	307 50 15.5	. .	— 1 18.6	358 55 18.1	— 1.2
27	297 8	11.0	8.8	8.2	11.0	35	. .	. .	. .	545	530	75.4	62 48 18.7	26.0	+ 1 58.7	113 56 38.6	+ 0.2
28	318 24	2.5	0.1	29.2	4.0	36	910	915	. .	. .	. .	75.2	41 32 30.2	39.0	+ 53 1	92 39 44.5	
29	318 56	2.8	1.2	0.2	5.3	35	. .	. .	. .	987	945	75.2	41 0 18.4	. .	+ 52.1	92 7 31.7	
30	49 40	9 27.5	27.9	27.4	26.6	36	663	. .	740	. .	640	75.2	310 16 23.7	. .	— 1 10.3	1 21 34.6	— 0.5
31	343 54	27.5	24.7	24.2	28.8	32	. .	. .	. .	861	. .	75.2	16 1 24.4	42.8	+ 17.1	67 8 2.7	+ 0.2
32																	
33	343 38	10 8.8	6.1	6.5	9.0	36	. .	. .	. .	930	880	75.5	16 18 38.1	35.5	+ 17.7	67 25 17.0	— 1.4
34	337 34	5.8	3.1	1.6	6.5	37	. .	995	. .	965	. .	75.5	22 22 50.7	. .	+ 25.0	73 29 36.9	— 0.3
35	48 16	9.2	4.8	5.1	7.2	35	220	. .	295	. .	160	75.5	311 40 11.9	. .	— 1 8.1	2 45 25.0	— 1.8
36	292 16	6.5	4.0	4.5	7.2	32	. .	350	. .	320	. .	75.5	67 39 25.3	. .	+ 2 26.8	118 48 13.3	— 1.7
37	294 54	1.7	29.0	28.5	2.2	39	. .	855	. .	845	. .	75.5	65 3 15.2	. .	+ 2 10.0	116 11 46.4	+ 0.1
38	343 16	9.3	6.6	5.2	9.5	36	. .	345	. .	305	. .	75.5	16 40 28.8	. .	+ 18.2	67 47 8.2	— 0.7
39	353 12	2.0	0.0	29.0	1.2	33	440	420	. .	. .	. .	75.5	6 43 37.2	. .	+ 7.2	57 50 5.6	+ 0.1
40	326 36	5.8	3.1	2.3	5.5	35	. .	455	. .	425	. .	75.5	33 20 11.7	. .	+ 40.0	84 27 12.9	— 0.8
41	354 34	9.6	6.8	5.8	9.0	32	070	. .	. .	. .	050	75.5	5 21 23.5	. .	+ 5.7	56 27 50.4	+ 9.3
42	349 22	2.7	0.5	29.0	1.5	33	. .	380	. .	340	. .	55.5	10 33 36.7	. .	+ 11.4	61 40 9.3	+ 0.2
43	348 8	11.8	7.4	7.5	10.1	33	. .	952	. .	. .	. .	75.5	11 47 53.8	. .	+ 12.7	62 54 27.7	— 1.3
44	52 6	8.6	5.5	5.5	7.2	35	602	. .	610	. .	. .	75.5	307 50 16.4	32.6	— 1 18.3	358 55 19.3	+ 0.3
45	348 8	26.2	25.0	20.2	27.3	33	. .	. .	. .	230	210	73.5	11 47 55.3	64.0	+ 11.7	62 54 28.2	— 0.5
46	52 6	17.7	15.6	14.5	14.0	34	730	. .	560	. .	. .	73.5	307 50 6.4	. .	— 1 12.2	358 55 15.4	— 2.7
47	297 8	20.5	20.8	16.8	19.7	35	. .	715	. .	680	. .	73.5	62 48 28.8	. .	+ 1 48.8	113 56 38.8	— 0.2
48	340 18	19.5	20.0	15.8	16.5	34	. .	550	. .	515	. .	73.5	19 38 9.7	. .	+ 20.1	70 44 51.0	
49																	
50	327 56	11.8	10.5	7.5	9.4	35	. .	485	. .	445	. .	73.5	32 0 15.8	. .	+ 35.1	83 7 12.1	— 0.8

No.	Barom.	At. Ther.
	in.	°
9	29.71	34.0
10	29.69	34.0
19	29.70	31.0
20	29.94	28.0
27	29.96	27.0
28	30.17	36.0
31	30.16	40.0
33	30.24	36.5
44	30.25	34.2
45	29.74	66.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
17	— 0.2	. .	. .	— 0.2
28	— 5.8	— 16 6.4	. .	— 16 12.2
29	— 5.8	+ 16 6.4	. .	+ 16 0.6
48	— 0.2	. .	. .	— 0.2

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Mar. 19	1	κ Cancri	E.	35.0	37.7	39.2	45.4	47 5	49.6	55.9	57.4	0.1	0 47.53	− 0.15	+ 8.89	+ 8.99	9 0 56.37	+ 0.09
	2	Weisse (2), 363 .	S.	25.0	28.6	30.6	38.9	41.6	44.3	52.6	54.6	57.7	18 41.54	− 0.63	. .	+ 9.01	9 18 49.92	− 1.68
	3	α Hydræ	S.	3.3	5.8	7.3	13.5	15.5	17.6	23.9	25.4	28.0	21 15.59	+ 0.08	+ 9.02	+ 9.01	9 21 24.68	− 0.04
	4	Armagh 2101 . .	S.	. .	. .	59.6	2.4	5.0	7.6	10.5	. .	. .	27 5.02	− 0.60	. .	+ 9.01	9 27 13.43	− 1.69
	5	Anonymous . .	S.	. .	. .	. .	. .	47.0	49.6	54.8	56.9	0.2	27 44.58	− 0.56	. .	+ 9.01	9 27 55.03	− 1.63
	6	ε Leonis	E.	23.8	25.5	29.9	32.1	34.3	36.5	38.8	43.3	44.9	38 34.34	− 0.33	+ 9.09	+ 8.99	9 38 43.00	− 0.16
	7	μ Leonis	E.	14.7	17.6	19.3	26.1	28.4	30.7	37.6	39.4	42.0	45 28.42	− 0.36	+ 8.98	+ 8.99	9 45 37.05	0.00
	8	α Leonis	E.	19.4	22.1	23.6	29.9	32.0	34.0	40.4	42.0	44.5	1 31.99	− 0.17	+ 9.04	+ 8.99	10 1 40.81	− 0.09
	9	γ^1 Leonis	E.	40.9	43.6	45.3	51.8	54.0	56.2	2.8	4.4	7.0	12 54.00	− 0.27	+ 9.06	+ 8.99	10 13 2.72	− 0.09
20	10	Uranus . . .	Sk.	37.9	40.5	42.2	48.6	50.8	52.8	59.5	1.2	3.9	36 50.82	+ 0.02	. .	+ 9.39	8 37 0.23	. .
	11	ι Ursæ Majoris . .	Sk.	8.3	12.3	14.6	24.0	27.0	30.1	39.4	41.7	45.5	50 26.99	− 0.46	. .	+ 9.39	8 50 35.92	− 0.09
	12	κ Cancri	Sk.	34.1	36.9	38.5	44.7	46.8	48.8	55.1	56.7	59.3	0 46.77	+ 0.11	+ 9.38	+ 9.40	9 0 56.28	+ 0.01
	13	ι Draconis . . .	Sk.	. .	. .	31.6	. .	. .	15.2	29.5	. .	. .	19 0.53	− 4.04	. .	+ 9.40	9 19 5.89	− 0.59
	14	α Hydræ	Sk.	. .	. .	10.9	13.0	15.0	17.0	19.2	. .	. .	21 15.02	+ 0.32	+ 9.34	+ 9.40	9 21 24.74	+ 0.03
	15	Weisse (2), 592 .	Sk.	. .	. .	21.4	24.1	26.9	29.4	31.9	. .	. .	29 26.74	− 0.25	. .	+ 9.40	9 29 35.89	− 1.64
	16	IX, 5	Sk.	27.3	30.3	32.1	39.4	41.9	44.4	51.5	53.4	56.4	40 41.86	+ 0.63	. .	+ 9.40	9 40 51.89	− 0.98
	17	μ Leonis	Sk.	13.9	16.8	18.4	. .	. .	. .	36.8	38.6	41.5	45 27.67	− 0.07	+ 9.44	+ 9.40	9 45 37.00	− 0.05
	18	Durch. +15°, 2147	Sk.	9.4	12.0	13.7	19.9	22.2	24.3	30.6	32.5	34.7	53 22.14	+ 0.07	. .	+ 9.40	9 53 31.61	− 1.26
	19	α Leonis	Sk.	18.8	21.4	23.0	. .	. .	. .	39.6	41.2	43.8	1 31.30	+ 0.10	+ 9.46	+ 9.41	10 1 40.81	− 0.09
	20	X, 4	Sk.	13.2	16.4	18.6	26.3	28.9	31.6	39.8	41.5	45.0	14 29.03	+ 0.72	. .	+ 9.41	10 14 39.16	− 1.09
	21	X, 6	Sk.	0.0	2.9	4.9	12.0	14.5	17.0	23.8	25.6	28.6	21 14.37	+ 0.59	. .	+ 9.41	10 21 24.37	− 1.07
	22	Weisse 560 . .	Sk.	. .	. .	8.8	10.6	12.7	15.0	17.0	. .	. .	32 12.82	+ 0.28	. .	+ 9.41	10 32 22.51	− 1.17
	23	Anonymous . .	Sk.	20.5	22.9	24.8	30.9	33.0	35.2	41.6	43.1	45.7	44 33.08	+ 0.39	. .	+ 9.41	10 44 42.88	− 1.13
	24	α Ursæ Majoris (R.)	Sk.	23.8	29.0	32.5	45.5	49.9	54.2	7.8	11.0	16.5	55 50.02	− 0.14	. .	+ 9.41	10 55 59.29	− 0.39
	25	XI, 2	Sk.	10.6	13.7	15.8	23.0	25.6	28.0	35.6	37.4	40.5	11 25.58	+ 0.64	. .	+ 9.42	11 11 35.64	− 1.18
	26	XI, 5	Sk.	. .	. .	4.8	7.1	9.6	11.9	14.3	. .	. .	22 9.54	+ 0.60	. .	+ 9.42	11 22 19.56	− 1.17
	27	XI, 8	Sk.	5.4	8.3	10.0	16.8	19.0	21.2	27.9	29.6	32.4	30 18.96	+ 0.50	. .	+ 9.42	11 30 28.88	− 1.17
	28	Jupiter I, N. . .	Sk.	56.4	58.9	0.6	. .	. .	. .	16.8	18.4	20.9	49 8.67	+ 0.20	. .	+ 9.42	11 49 18.29	. .
	29	Jupiter II, S. . .	Sk.	. .	. .	7.4	9.5	11.5	13.6	15.6	. .	. .	49 11.52	+ 0.20	. .	+ 9.42	11 49 21.14	. .
	30	o Virginis . . .	Sk.	26.7	29.4	30.8	37.0	39.3	41.3	47.5	49.2	51.7	58 39.21	+ 0.13	+ 9.49	+ 9.43	11 58 48.77	− 0.08
	31	η Virginis (R.) . .	Sk.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	32	β Corvi	Sk.	24.3	27.0	28.8	35.3	37.7	39.8	46.5	48.0	50.9	27 37.59	+ 0.49	+ 9.35	+ 9.43	12 27 47.51	+ 0.04
	33	Polaris, S. P. . .	Sk.	. .	. .	. .	. .	. .	27.0	. .	. .	. .	10 53.2	+25.66	. .	+ 9.44	1 11 28.30	− 0.26
21	34	α Canis Minoris .	E.	20.6	23.4	24.9	31.0	33.1	35.2	41.3	42.9	45.5	32 33.10	+ 0.27	+ 9.41	+ 9.45	7 32 42.82	− 0.12
	35	β Geminorum . .	E.	13.4	16.5	18.2	25.0	27.4	29.7	36.6	38.4	41.4	37 27.40	+ 0.01	+ 9.51	+ 9.45	7 37 36.86	− 0.00
	36	φ Geminorum . .	E.	24.6	27.4	29.0	36.0	38.3	40.5	47.5	49.1	52.0	45 38.27	+ 0.01	+ 9.50	+ 9.45	7 45 47.73	− 0.13
	37	λ Ursæ Minoris, S. P.	E.	. .	. .	27.0	38.0	49.0	58.5	. .	. .	. .	48 48.88	+37.26	. .	+ 9.45	19 49 35.59	+ 0.27
	38	Uranus I, C. . .	E.	32.6	35.3	36.9	. .	. .	. .	54.2	55.8	58.7	36 45.58	+ 0.11	. .	+ 9.46	8 36 55.15	. .
	39	Uranus II . . .	E.	. .	. .	41.6	43.8	45.9	48.0	50.2	. .	. .	36 45.90	+ 0.11	. .	+ 9.46	8 36 55.57	. .
	40	ε Hydræ	E.	44.9	47.5	49.0	55.3	57.3	59.4	5.5	7.0	9.6	39 57.28	+ 0.26	+ 9.49	+ 9.46	8 40 7.00	− 0.07
	41	κ Cancri	E.	34.0	36.8	38.3	44.5	46.6	48.7	54.8	56.5	59.0	0 46.58	+ 0.21	+ 9.46	+ 9.46	9 0 56.25	− 0.01
	42	Weisse (2), 363 .	E.	24.5	27.9	30.0	38.0	40.9	43.6	51.8	53.9	57.4	18 40.89	− 0.24	. .	+ 9.47	9 18 50.12	− 1.66
	43	α Hydræ	E.	2.4	5.0	6.7	12.8	14.8	16.9	23.2	24.6	27.4	21 14.87	+ 0.44	+ 9.36	+ 9.47	9 21 24.78	+ 0.08
	44	Armagh 2101 . .	E.	. .	. .	58.9	1.7	4.3	7.0	9.7	. .	. .	27 4.32	− 0.22	. .	+ 9.47	9 27 13.57	− 1.68
	45	Anonymous . .	E.	. .	. .	. .	. .	. .	. .	54.5	56.4	59.4	27 44.13	− 0.18	. .	+ 9.47	9 27 53.44	− 1.50
	46	IX, 6	E.	. .	. .	26.3	28.6	31.0	33.6	36.0	. .	. .	40 31.10	+ 0.80	. .	+ 9.47	9 40 41.37	− 0.97
	47	IX, 7	E.	. .	. .	. .	. .	. .	. .	31.6	33.4	36.5	41 22.18	+ 0.73	. .	+ 9.47	9 41 32.38	− 0.96
	48	IX, 13	E.	. .	. .	58.2	0.6	3.0	5.3	10.2	12.0	15.0	48 0.59	+ 0.74	. .	+ 9.47	9 48 10.80	− 0.98
	49	α Leonis	E.	18.5	21.3	22.8	29.0	31.1	33.2	39.5	41.1	43.8	1 31.14	+ 0.20	+ 9.51	+ 9.43	10 1 40.82	− 0.07
	50	Weisse (2), 28 . .	E.	16.2	19.0	20.7	27.1	29.3	31.5	38.0	39.7	42.5	3 29.33	+ 0.11	. .	+ 9.48	10 3 38.92	− 1.36

4. Bisections at wires B_1 and B_3.
13. Bisections probably at set B.
47. Wire A used.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	′
1	332 14	10 6.7	7.9	3.2	7.7	37	. .	390	. .	370	. .	73.5	27 42 41.7	. .	+ 29.5	78 49 32.4	— 0.7
2	2 36	13.2	13.5	10.2	10.5	32	. .	024	. .	078	. .	73.5	357 19 25.8	. .	— 2.6	48 25 44.4	+ 6.7
3	312 56	14.0	12.9	8.3	7.2	32	. .	440	. .	530	. .	73.5	46 59 30.8	. .	+ 1 0.3	98 6 52.3	— 0.7
4	1 14	10.7	11.4	6.7	7.7	37	524	480	. .	. .	. .	73.5	358 42 46.0	617	— 1.3	49 49 5.9	+ 5.8
5	358 28	15.0	15.7	10.7	13.1	31	. .	. .	. .	. .	695	73.5	1 27 21.8	. .	+ 1.4	52 33 44.4	+ 5.1
6	345 24	17.8	17.4	12.4	16.1	34	. .	580	. .	560	. .	73.5	14 32 8.3	. .	+ 14.6	65 38 44.1	— 2.1
7	347 38	10.3	9.4	3.8	7.5	32	. .	380	. .	330	. .	73.5	12 17 26.2	. .	+ 12.3	63 23 59.7	— 1.0
8	333 38	11.2	10.2	5.9	8.2	35	. .	470	. .	490	. .	73.5	26 18 15.1	. .	+ 27.9	77 25 4.2	— 1.3
9	311 32	7.2	8.7	4.2	5.5	37	. .	165	. .	125	. .	73.5	18 24 38.2	. .	+ 18.8	69 31 18.2	— 1.0
10	340 18	14.0	13.7	9.5	11.5	33	. .	. .	. .	739	660	74.1	19 37 52.1	39.6	+ 21.3	70 44 34.6	
11	9 34	13.4	12.5	9.0	10.1	32	. .	630	. .	550	. .	74.1	350 21 34.0	. .	— 10.1	41 27 45.1	— 0.3
12	332 14	9.5	9.1	5.5	6.1	37	. .	110	. .	082	. .	74.1	27 42 39.0	. .	+ 31.3	68 49 31.5	— 1.6
13	42 54	11.1	9.0	3.4	5.7	32	470	657	. .	. .	. .	74.1	317 1 29.5	. .	— 55 5	8 6 55.2	+ 0.2
14	312 56	12.5	11.5	7.8	10.3	32	. .	. .	. .	272	190	74.1	46 59 27.7	. .	+ 1 3.9	98 6 52.8	— 0.2
15	359 30	7.0	6.0	3.4	4.0	30	. .	. .	. .	732	732	74.1	0 24 59.8	. .	+ 0.4	51 31 21.4	+ 5.3
16	288 10	6.9	6.0	2.0	4.5	36	415	542	. .	. .	. .	74.1	71 46 26.1	. .	+ 2 59.3	122 55 46.6	— 8.5
17	347 38	10.0	8.2	4.2	5.5	32	. .	345	. .	353	. .	74.1	12 17 25.9	. .	+ 13.0	63 24 0.1	— 0.5
18	336 6	10.8	9.4	5.0	7.1	35	. .	. .	. .	208	130	74.1	23 50 10.5	39.5	+ 26.3	74 56 58.0	— 1.4
19	333 38	16.7	13.2	10.5	12.5	35	. .	161	. .	090	. .	74.1	26 18 14.5	. .	+ 29.9	77 25 5.6	+ 0.2
20	252 4	8.8	6.8	3.0	4.5	40	. .	. .	. .	575	640	74.1	77 53 30.9	. .	+ 4 31.2	129 4 23.3	— 8.4
21	280 40	6.1	4.9	0.8	3.5	37	. .	900	. .	800	. .	74.1	69 16 46.6	. .	+ 2 36.6	120 25 44.4	— 8.1
22	316 46	13.5	11.9	8.5	11.7	34	. .	835	. .	703	. .	74.1	43 10 9.6	. .	+ 56.0	94 17 26.8	— 6.0
23	306 50	5.5	4 7	29.5	3.2	34	. .	517	. .	539	. .	74.1	53 5 55.2	. .	+ 1 19.5	104 13 35.9	— 7.2
24	156 24	13.8	13.4	8.0	9.8	33	. .	. .	. .	608	629	74.1	203 31 48.7	37.8	+ 26.0	27 34 6.5	— 0.8
25	287 4	15.0	12.6	9.4	11.5	40	. .	242	. .	180	. .	74.1	72 53 31.0	. .	+ 3 12.1	124 3 4.3	— 6.7
26	289 56	14.0	11.5	7.5	11.5	37	. .	610	. .	568	. .	74.1	70 0 49.9	. .	+ 2 43.1	121 9 54.2	— 7.6
27	297 20	1.9	0.0	26.5	0.0	36	. .	264	. .	252	. .	74.1	62 36 18.0	. .	+ 1 54.9	113 44 34.1	— 7.8
28	323 56	10.3	9.0	5.0	9.0	36	458	471	. .	. .	. .	74.1	36 0 29.7	. .	+ 43.4	87 7 34.3	
29	323 56	10.3	9.0	5.0	9.0	39	. .	. .	. .	250	340	74.1	36 1 13.8	. .	+ 43.5	87 8 18.5	
30	330 30	9 29.0	28.2	24.5	27.5	39	. .	948	. .	912	. .	74.1	29 27 12.1	. .	+ 33.8	80 34 7.1	— 2.0
31	218 46	10 16.3	14.5	10.9	10.5	30	. .	. .	. .	481	349	74.1	141 9 2.5	38.0	— 48.2	89 58 6.9	— 0.4
32	298 22	4.5	3.7	29.5	2.5	34	. .	445	. .	362	. .	74.1	61 33 52.6	. .	+ 1 50.0	112 42 3.8	— 1.3
33																	
34	326 36	9.2	8.5	5.5	6.0	35	. .	455	. .	440	. .	73.8	33 20 13.3	. .	+ 38.7	84 27 13.2	— 0.5
35	319 22	5.4	5.2	2.2	3.0	33	. .	230	. .	200	. .	73.8	10 33 35.9	45.0	+ 11.0	61 40 8.1	— 0.6
36	348 8	10.2	9.5	6.8	9.1	34	. .	120	. .	095	. .	73.8	11 47 54.5	. .	+ 12.3	62 54 28.0	— 0.6
37	52 6	7.5	5.7	4.0	4.6	35	560	. .	550	. .	. .	73.8	307 50 12.8	. .	— 1 15.6	358 55 18.4	+ 0.6
38	340 18	11.0	11.2	7.9	9.3	32	. .	800	. .	760	. .	73.8	19 37 35.0	. .	+ 21.0	70 44 17.2	
39																	
40	327 56	9.1	8.7	5.8	7.5	35	. .	600	. .	520	. .	73.8	32 0 15.5	. .	+ 36.8	83 7 13.5	+ 0.6
41	332 14	6.4	6.5	3.2	5.0	37	355	. .	. .	. .	285	73.8	27 42 40.0	. .	+ 31.0	78 49 32.2	— 0.9
42	2 36	10.8	10.7	8.3	8.7	32	. .	195	. .	190	. .	73.8	357 19 26.0	. .	— 2.7	48 25 44.5	+ 7.0
43	312 56	8.5	7.4	4.7	6.6	32	. .	645	. .	585	. .	73.8	46 59 29.3	. .	+ 1 3.2	98 6 53.7	+ 0.6
44	1 14	13 7	12.6	10.2	11.1	37	265	245	. .	. .	. .	73.8	358 42 45.6	. .	— 1.3	49 49 5.5	+ 6.2
45	353 28	8.5	8.1	5.7	6.4	31	. .	. .	. .	025	990	73.8	1 27 5.9	. .	+ 1.5	52 33 28.6	+ 5.4
46	225 50	9.6	8.5	5.4	7.3	39	. .	180	. .	. .	. .	73.8	74 7 10.3	. .	+ 3 24.9	125 16 56.4	— 8.9
47	290 40	18.0	15.6	12.3	15.0	38	. .	. .	. .	750	730	73.8	69 14 38.4	. .	+ 2 34.7	120 23 34.3	— 8.4
48	289 34	9.8	8.2	4.8	6.8	32	. .	. .	. .	855	805	73.8	70 21 33.3	. .	+ 2 44.3	121 30 38.8	— 8.5
49	353 38	16.6	14.5	11.6	14.2	35	030	025	. .	. .	. .	73.8	26 18 13.6	. .	+ 29.2	77 25 4.0	— 1.4
50	340 34	8.0	7.3	3.7	5.0	33	910	900	. .	. .	. .	73.8	19 21 48.1	. .	+ 20.8	70 28 30.1	— 1.0

No.	Barom.	At. Ther.
	in.	°
10	30.04	44.6
18	. .	43.6
19	30.05	. .
24	30.05	42.5
34	30.03	41.2
35	29.96	48.5

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination	Sum.
	′ ″	′ ″	′ ″	′ ″
10	— 0.2	. .	. .	— 0.2
28	— 1.2	+ 22.1	. .	+ 20.9
29	— 1.2	— 22.1	. .	— 23.3
38	— 0.2	. .	. .	— 0.2

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Mar. 21	1	Anonymous . .	E.	29.9	32.4	34.0	40.1	42.4	44.5	50.5	52.3	54.8	14 42.31	+ 0.23	. .	+ 9.48	10 14 52.02	− 1.25
	2	Anonymous . .	E.	56.0	58.5	0.3	6.4	8.5	10.5	16.5	18.2	20.7	16 8.40	+ 0.23	. .	+ 9.48	10 16 18.11	− 1.26
	3	Weisse 338 . .	E.	27.2	29.8	31.4	37.5	39.6	41.6	47.7	49.3	51.8	20 39.54	+ 0.20	. .	+ 9.48	10 20 49.31	− 1.22
	4	Anonymous . .	E.	. .	. .	19.3	21.4	23.5	25.5	27.6	. .	. .	22 23.46	+ 0.20	. .	+ 9.48	10 22 33.25	− 1.22
	5	51 Cephei . . .	Sk.	. .	. .	. .	59.3	10.5	33.5	5.8	. .	. .	40 40.95	+ 0.18	. .	+10.40	6 40 51.53	+ 2.23
	6	ε Canis Majoris. .	Sk.	16.3	19.3	21.0	28.0	30.2	32.6	39.6	41.4	44.3	53 30.30	− 0.13	+10.50	+10.40	6 53 40.55	− 0.15
	7	δ Geminorum . .	Sk.	12.8	15.5	17.2	23.8	26.2	28.3	34.9	36.4	39.2	12 26.03	− 0.15	+10.37	+10.40	7 12 36.28	− 0.03
	8	λ Ursæ Minoris, S.P.	Sk.	. .	. .	17.0	22.0	33.0	42.0	54.0	. .	. .	49 33.60	− 1.11	. .	+10.40	19 49 42.89	+ 4.67
	9	3 Ursæ Majoris . .	Sk.	. .	. .	55.3	0.7	6.7	12.3	17.9	. .	. .	0 6.58	− 0.14	. .	+10.40	8 0 16.84	− 0.37
	10	κ Cephei, S. P. . .	Sk.	36.3	29.0	10.1	0.5	51.9	42.8	32.9	14.4	7.4	12 51.70	− 0.27	. .	+10.40	20 13 1.83	+ 0.31
	11	Groom. 3241, S. P.	Sk.	50.6	45.6	32.4	25.7	19.0	12.6	5.7	52.4	47.6	30 19.07	− 0.25	. .	+10.41	20 30 29.23	+ 0.31
	12	Uranus. . . .	Sk.	18.2	21.0	22.6	29.1	31.3	33.4	40.0	41.6	44.3	36 31.28	− 0.10	. .	+10.41	8 36 41 53	. .
	13	ι Ursæ Majoris . .	Sk.	7.2	11.1	13.4	22.7	25.8	28.8	38.2	40.4	44.3	50 25.77	− 0.15	. .	+10.41	8 50 36.03	+ 0.10
	14	σ^2 Ursæ Majoris . .	Sk.	43.7	48.1	58.6	3.8	9.5	14.7	20.3	31.2	35.4	59 9.48	− 0.14	. .	+10.41	8 59 19.75	− 0.06
	15	1 Draconis . . .	Sk.	47.4	57.5	26.3	41.3	55.6	10.1	24.8	53.4	3.8	18 55.58	− 0.06	. .	+10.41	9 19 5.93	− 0.15
	16	Durch. 37°, 2005 .	Sk.	57.6	0.8	2.8	10.4	13.0	15.6	23.1	25.1	28.3	27 12.97	− 0.15	. .	+10.41	9 27 23.23	− 1.50
24	17	IX, 6	Sk.	15.7	19.0	20.7	28.3	30.9	33.5	40.8	42.8	45.8	40 30.83	− 0.12	. .	+10.41	9 40 41.12	− 0.03
	18	Durch. 15°, 2147 .	Sk.	8.7	11.0	12.7	19.2	21.4	23.4	29.6	31.2	33.8	53 21.22	− 0.15	. .	+10.41	9 53 31.48	− 1.22
	19	Weisse (2), 28. .	Sk.	15.4	18.3	19.9	26.4	28.7	30.9	37.3	39.0	41.7	3 28.62	− 0.15	. .	+10 42	10 3 38.89	− 1.31
	20	Rumker 3155 . .	Sk.	50.9	53.4	55.0	1.3	3.3	5.4	11.7	13.3	15.8	15 3.34	− 0.15	. .	+10.42	10 15 13.61	− 1.20
	21	X, 6.	Sk.	59.9	2.9	4.5	11.6	14.0	16.5	23.5	25.5	28.3	21 14.08	− 0.13	. .	+10.42	10 21 24.37	− 1.05
	22	X, 8.	Sk.	31.8	35.0	37.4	45.2	47.8	50.4	58.4	0.6	3.7	27 47.81	− 0.12	. .	+10.42	10 27 58.11	− 1.10
	23	X, 15	Sk.	47.0	50.0	51.7	. .	1.7	. .	11.5	13.4	16.5	41 1.68	− 0.12	. .	+10.42	10 41 11.98	− 1.10
	24	X, 17	Sk.	42.8	46.0	48.0	55.5	58.0	0.6	8.3	10.0	13.3	47 58.06	− 0.12	. .	+10.42	10 48 8.30	− 1.13
	25	α Ursæ Majoris (R.)	Sk.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	26	δ Leonis	Sk.	2.5	5.3	6.8	13.5	15.6	17.7	24.4	26.0	28.8	7 15.62	− 0.15	+10.38	+10.42	11 7 25.89	− 0.02
	27	δ Crateris . . .	Sk.	40.9	43.6	45.0	51.5	53.5	55.5	2.0	3.5	6.0	12 53.50	− 0.14	+10.36	+10.42	11 13 3.78	+ 0.01
	28	τ Leonis	Sk.	6.2	8.8	10.3	16.5	18.6	20.5	26.6	28.3	30.8	21 18.51	− 0.15	+10.41	+10.42	11 21 28.78	− 0.01
25	29	δ Canis Majoris. .	E.	52.6	55.5	57.3	4.1	6.4	8.7	15.4	17.3	20.0	3 6.37	− 0.23	+10.17	+10 21	7 3 16.37	− 0.01
	30	δ Geminorum . .	E.	13.0	15.8	17.4	24.1	26.3	28.5	35.1	36.8	39.6	12 26.29	− 0.27	+10.21	+10.21	7 12 36.23	− 0.06
	31	Moon I, N. . .	E.	6.8	9.8	11.7	18.7	21.0	23.3	30.5	32.3	35.2	19 21.03	− 0.29	. .	+10.21	7 19 30.95	+71.65
	32	a^2 Geminorum . .	E.	9.7	12.8	14.5	21.7	24.1	26.6	33.8	35.5	38.6	26 24.14	− 0.29	+10.23	+10.21	7 26 34.06	+ 0.22
	33	α Canis Minoris .	E.	20.5	23.0	24.6	30.8	32.8	34.8	41.0	42.6	45.0	32 32.79	− 0.26	+10.19	+10 21	7 32 42.74	− 0.14
	34	β Geminorum . .	E.	13.0	15.9	17.7	24.6	26.9	29.2	36.0	38.0	40.8	37 26.90	− 0.28	+10.29	+10.21	7 37 36.85	− 0.07
	35	o Geminorum . .	E.	23.9	26.9	28.7	35.5	37.8	40.0	46.9	48.7	51.6	45 37.78	− 0.28	+10 29	+10.21	7 45 47.71	− 0.07
	36	λ Ursæ Minoris, S.P.	E.	. .	. .	3.0	12.0	26.0	38.0	. .	. .	. .	49 25.50	+ 3.28	. .	+10.21	19 49 38.99	− 0 1
	37	Uranus I, C. . .	E.	14.4	17.1	18.7	. .	. .	. .	36.0	37.7	40.3	36 27.37	− 0.27	. .	+10.21	8 36 37.31	.
	38	Uranus. . . .	E.	. .	. .	23.3	25.5	27.6	29.8	32.0	. .	. .	36 27.64	− 0.27	. .	+10.21	8 36 37.58	.
	39	ε Hydræ	E.	44.7	47.3	48.8	54.9	57.0	59.0	5.3	6.8	9.4	39 57.02	− 0.26	+10.22	+10 21	8 40 6.97	− 0.01
	40	ι Ursæ Majoris (R.)	E.	6.7	10.7	13.0	22.1	25.2	28.1	37.5	39.9	43.8	50 25.22	+ 0.31	. .	+10.21	8 50 35.74	− 0.17
	41	κ Cancri	E.	33.7	36.4	37.9	44.2	46.3	48.4	54.6	56.3	58.8	0 46.29	− 0.26	+10.18	+10.21	9 0 56.22	+ 0.01
	42	Armagh 2101 . .	E.	. .	. .	. .	0.7	3.5	6.1	8.9	. .	. .	27 3.46	− 0.30	. .	+10 21	9 27 13.37	− 1.62
	43	Anonymous . .	E.	. .	. .	. .	. .	. .	. .	43.9	45.7	48.9	27 33.52	− 0.26	. .	+10.21	9 27 43.44	− 1.54
	44	Anonymous . .	E.	. .	. .	. .	. .	. .	. .	53.4	55.4	. .	27 43.15	− 0.29	. .	+10.21	9 27 53.11	− 1.55
	45	IX, 5	E.	27.2	30.4	32.2	39.5	42.0	44.5	51.6	53.5	56.6	40 41.94	− 0.23	. .	+10.21	9 40 51.97	− 0.02
	46	IX, 12	E.	26.8	30.4	32.0	39.8	42.5	45.2	53.5	55.4	58.6	44 42.69	− 0.22	. .	+10.21	9 44 52.68	− 0.05
	47	Durch. 15°, 2147 .	E.	8.9	11.6	13.1	19.5	21.7	23.8	30.0	31.6	34.5	53 21.63	− 0.26	. .	+10.21	9 53 31.58	− 1.25
	48	α Leonis	E.	18.3	20.9	22.5	28.8	30.9	32.9	39.2	40.9	43.5	1 30.88	− 0.26	+10.21	+10.21	10 1 40.83	− 0 03
	49	X, 3.	E.	41.4	44.8	46.6	54.2	56.8	59.4	7.0	9.0	12.3	12 56.83	− 0.22	. .	+10.21	10 13 6.83	− 1.03
	50	X, 5.	E.	. .	. .	44.4	46.8	49.3	51.7	54.2	. .	. .	18 49.28	− 0.23	. .	+10.21	10 18 59.20	− 1.04

3. Wire B used.
10, 11, 14, 15, 31. Bisections at sets B and D.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	330 46	10 7.2	6.6	4.6	6.5	35	280	265	. .	. .	. .	73.8	29 10 9.2	. .	+ 33.0	80 17 3.4	− 1.7
2	330 42	2.7	1.7	29.5	0.9	32	. .	. .	. .	205	185	73.8	29 13 17.8	. .	+ 33.1	80 20 12.1	− 3.5
3	325 46	8.1	7.0	3.0	5.7	31	. .	970	. .	960	. .	73.8	34 11 52.0	. .	+ 40.2	85 18 53.4	− 4.6
4	325 40	8.1	7 0	3.0	5.7	33	. .	675	. .	655	. .	73.8	34 9 44.6	41.0	+ 40.2	85 16 46.0	− 4.5
5	43 10	9.3	5.3	3.5	5.2	35	. .	355	302	296	. .	76.7	311 40 12.7	. .	− 1 8.3	2 45 25.6	− 0.6
6	232 15	8.0	5.0	2.1	5.9	32	. .	478	. .	414	. .	76.7	67 39 28.0	33.6	+ 2 27.3	118 48 16.5	0.0
7	313 16	7.5	5.4	1.3	4.5	36	. .	540	. .	540	. .	76.7	16 40 30.4	. .	+ 18.3	67 47 9.9	+ 1.4
8	52 6	4.6	1 5	29.4	0.6	35	852	838	844	859	868	76.7	307 50 16.3	. .	− 1 18.8	358 55 18.7	+ 1.1
9	23 52	4.6	2.0	0 0	0.9	33	. .	. .	. .	350	300	76.7	330 3 24.6	. .	− 35.3	21 9 10.5	− 0.4
10	63 40	9 25.7	23.7	21.0	23.7	32	016	. .	. .	. .	028	76.7	296 15 9.5	30.2	− 2 4.0	347 19 26.7	+ 0.7
11	68 54	10 6.1	2.3	0.0	1.0	35	460	. .	. .	. .	554	76.7	291 2 11.8	. .	− 2 38.4	342 5 54.6	+ 0.9
12	340 20	9 26.4	25.0	22.3	25.2	38	. .	380	. .	306	. .	76.7	19 36 48.0	30.8	+ 21.9	70 43 31.1	
13	9 34	10 4.1	5.0	0.7	2.0	32	. .	960	. .	915	. .	76.7	350 21 33.7	. .	− 10.4	41 27 44.5	− 0.3
14	28 40	9 25.9	23.5	21.4	22.5	32	683	. .	. .	. .	670	76.7	331 15 19.9	. .	− 33.7	22 21 7.4	− 1.6
15	42 54	10 2.4	29.5	26.1	29.1	33	050	. .	. .	. .	940	76.7	317 1 31.1	. .	− 57.1	8 6 55.2	+ 1.1
16	358 34	3.5	2.3	0.5	2.1	36	. .	. .	. .	088	962	76.7	1 22 20.5	29.8	+ 1.5	52 28 43.2	+ 4.3
17	285 50	9 26.7	23.7	20.1	23.5	39	. .	462	. .	331	. .	76.7	74 7 2.6	. .	+ 3 33.5	125 16 57.3	− 9.4
18	330 6	10 5.0	1.5	28.4	1.5	35	. .	450	. .	408	. .	76.7	23 50 10.2	. .	+ 27.2	74 56 58.6	− 1.4
19	310 34	4.5	29.1	27.9	0.0	34	. .	017	. .	965	. .	76.7	19 21 47.0	28.5	+ 21.7	70 28 29.9	− 0.8
20	332 24	9 29.3	26.0	23.1	25.0	39	. .	281	. .	220	. .	76.7	27 33 3.0	. .	+ 32.2	78 39 56.4	− 3.0
21	290 40	25.7	24.5	29.5	22.1	37	. .	931	. .	930	. .	76.7	69 16 42.1	. .	+ 2 41.8	120 25 45.1	− 8.8
22	231 32	10 7.5	6.9	3.0	3.5	35	. .	369	. .	268	. .	76.7	78 24 11.8	. .	+ 4 53.2	129 35 26.2	− 9.2
23	287 6	8.0	5 1	3.0	3.9	34	. .	942	. .	942	. .	76.7	72 50 5.9	. .	+ 3 17.6	123 59 44.7	− 8.8
24	285 18	12.9	10.4	7.7	8.6	31	. .	549	. .	548	. .	76.7	74 37 16.8	. .	+ 3 41.3	125 47 19.3	− 8.9
25	156 24	4.3	2.5	29.6	29.6	34	. .	. .	. .	. .	182	76.7	203 31 50.0	. .	+ 26.9	27 34 4.3	− 1.9
2	342 16	7.7	5.8	3.0	4.0	36	. .	736	. .	732	. .	76.7	17 40 33.8	. .	+ 19.7	68 47 14.7	− 0.7
27	306 58	7.1	5.0	1.9	4.5	35	. .	470	. .	440	. .	76.7	52 58 13.5	. .	+ 1 21.8	104 5 56.5	+ 0.2
28	324 36	6.8	3 2	0 3	2.7	34	. .	720	. .	665	. .	76.7	35 20 0.5	27.0	+ 43.8	86 27 5.5	− 1.2
29	294 54	1.0	29.5	27.7	28.6	40	. .	195	. .	175	. .	76.2	65 3 19.8	45.1	+ 2 6.4	116 11 47.4	+ 0.6
30	343 16	3.7	2.2	29.2	0.4	36	. .	815	. .	775	. .	76.2	16 40 30.4	. .	+ 17.7	67 47 9.3	+ 0.8
31	318 16	0.5	5.0	2.1	2.7	32	535	. .	620	. .	650	76.2	11 39 28.8	. .	+ 12.2	62 46 2.2	
32	353 12	9 29.6	28.4	26.5	26.2	33	. .	580	. .	530	. .	76.2	6 43 37.2	. .	+ 7.0	57 50 5.4	+ 0.5
33	320 36	10 4.3	3.1	1.0	2 0	35	630	. .	. .	. .	570	76.2	33 20 13.3	. .	+ 38.9	84 27 13.4	− 0.3
34	339 22	9 28.7	27.7	24.8	26.5	33	590	. .	. .	. .	540	76.2	10 33 36.8	. .	+ 11.0	61 40 9.0	+ 0.5
35	3 8 8	10 7.7	5.5	3.7	4.0	34	195	175	. .	. .	. .	76.2	11 47 54.1	. .	+ 12.4	62 54 27.7	− 0.7
.	. .	. .	. .	. .	. .	.	.	. .	. .	. .	. .	. .	. . .	44.0			
36	340 29	3.0	2.3	29.2	29.2	37	. .	170	. .	160	. .	76.2	19 36 35.6	. .	+ 21.1	70 43 17.9	
37																	
38	357 56	8.0	7.3	4.3	5.1	35	595	. .	. .	. .	545	76.2	32 0 16.4	. .	+ 37.0	83 7 14.6	+ 1.7
39	170 18	12.3	10.4	8.0	6.5	36	. .	175	. .	205	. .	76.2	189 38 28.6	. .	+ 10.1	41 27 42.5	− 2.1
40	332 14	1.6	1.3	28.2	0.5	37	. .	620	. .	585	. .	76.2	27 42 41.7	. .	+ 31.2	78 49 34.1	+ 1.1
41	1 14	4 3	2.5	0.5	0.4	37	860	840	. .	. .	. .	76.2	358 42 47.1	. .	− 1.3	49 49 7.0	+ 6.7
42	33 28	3.0	1.8	29.5	0.0	31	. .	. .	. .	070	050	76.2	1 27 2.9	. .	+ 1.5	52 33 25.6	+ 5.9
43	33 28	3.0	1.8	29.5	0 0	31	. .	. .	. .	375	325	76.2	1 27 7.4	. .	+ 1.5	52 33 30.1	+ 5.9
44	288 10	7.5	7.8	3.5	5.0	36	. .	470	. .	425	. .	76.2	71 46 29.3	. .	+ 2 58.2	122 55 48.7	− 0.9
45	291 32	8.5	7.4	3.5	4.3	34	. .	920	. .	910	. .	76.2	78 24 5.8	. .	+ 4 41.6	129 35 8.6	− 9.9
46	339 6	9.3	8.3	4.8	5.4	35	. .	530	. .	460	. .	76.2	23 50 16.0	. .	+ 26.2	74 57 3.4	− 1.2
47	333 39	11.1	8.3	6.3	6.8	35	570	560	. .	. .	. .	76.2	26 18 18.0	. .	+ 29.4	77 25 8.6	+ 3.4
48	284 50	12.4	11.2	7.2	8.5	36	. .	940	. .	905	. .	76.2	75 0 40.4	. .	+ 3 38.1	126 10 39.7	− 9.4
49	285 14	9.6	8.6	5.0	5.8	34	215	185	. .	. .	. .	76.2	71 41 55.7	. .	+ 2 57.6	122 51 14.5	− 9.2

No.	Barom.	At. Ther.
	in.	°
48	29.92	46.5
1	30.34	35.8
2	30.34	33.5
12	30.35	33.5
24	30.35	32.8
1	30.35	31.8
25	30.35	30.6
24	30.12	49.5

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
31	−11 8.7	+ 15 19.0	. .	+ 4 10.3
37	− 0.2	. . .	. .	− 0.2

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Mar. 25	1	X, 6	E.	. .	. .	9.7	12.2	14.5	16.8	19.2	. .	. .	21 14.48	− 0.23	. .	+10.21	10 21 24.46	− 1.04
	2	X, 7	E.	. .	. .	43.7	46.0	48.3	50.5	52.7	. .	. .	24 48.24	− 0.23	. .	+10.21	10 24 58.22	− 1.05
	3	X, 8	E.	32.2	35.6	37.7	45.6	48.4	51.0	58.9	1.0	4.5	27 48.32	− 0.22	. .	+10.21	10 27 58.31	− 1.03
26	4	Moon I, N. . .	F.	11.9	14.8	16.4	23.3	25.5	28.0	34.9	36.6	39.4	16 25.64	− 0.30	. .	+10.27	8 16 35.55	+69.36
	5	Uranus I, C. . .	F.	10.2	13.1	14.8	. .	. .	. .	31.9	33.5	36.3	36 23.30	− 0.34	. .	+10.27	8 36 33.23	. .
	6	Uranus II . . .	F.	. .	. .	19.5	21.6	. .	25.9	28.2	. .	. .	36 23.79	− 0.34	. .	+10.27	8 36 33.72	. .
	7	ι Ursæ Majoris (R.)	F.	6.9	10.6	12.9	22.0	25.0	28.0	37.5	39.8	43.6	50 25.14	+ 0.3	. .	+10.28	8 50 35.76	− 0.14
	8	κ Cancri	F.	33.8	36.4	37.9	44.2	46.2	48.3	54.6	56.0	58.8	0 46.24	− 0.35	+10.28	+10.28	9 0 56.20	− 0.01
	9	α Hydræ	F.	. .	. .	10.6	12.6	14.7	16.9	18.8	. .	. .	21 14.72	− 0.27	+10.17	+10.28	9 21 24.73	+ 0.08
	10	Bonn. VI+39°, 2260	F.	. .	. .	41.5	44.1	46.6	49.1	52.0	. .	. .	25 46.66	− 0.41	. .	+10.28	9 25 56.53	− 1.57
	11	ε Leonis	F.	19.8	22.6	24.0	31.0	33.2	35.4	42.2	43.7	46.6	33 33.17	− 0.36	+10.23	+10.28	9 38 43.09	− 0.02
	12	IX, 12	F.	26.3	30.0	32.0	39.8	42.7	45.3	53.3	55.0	58.5	44 42.54	− 0.20	. .	+10.28	9 44 52.62	− 0.94
	13	α Leonis (R.) . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	14	γ¹ Leonis	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	15	Anonymous . .	F.	. .	. .	. .	. .	. .	. .	50.4	51.9	54.5	14 42.08	− 0.32	. .	+10.28	10 14 52.04	− 1.23
	16	Weisse 404 . .	F.	. .	. .	47.7	49.6	51.6	53.7	55.8	. .	. .	23 51.68	− 0.30	. .	+10.28	10 24 1.66	− 1.17
	17	Lamont 923 . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	18	Anonymous . .	F.	. .	. .	58.3	0.6	2.7	4.5	6.6	. .	. .	34 2.54	− 0.28	. .	+10.28	10 34 12.54	− 1.15
	19	l Leonis	F.	16.8	19.5	21.0	27.2	29.3	31.4	37.6	39.2	41.8	42 29.31	− 0.32	+10.31	+10.28	10 42 39.27	− 0.03
	20	Anonymous . .	F.	20.1	22.9	24.3	30.8	32.9	34.8	41.4	42.8	45.5	44 32.83	− 0.26	. .	+10.28	10 44 42.85	− 1.12
	21	α Ursæ Majoris (R.)	F.	22.3	27.9	31.0	44.2	48.7	53.1	6.5	9.7	15.3	55 48.74	+ 0.47	. .	+10.28	10 55 59.49	− 0.14
	22	δ Leonis (R.) . .	F.	2.3	4.9	6.7	13.1	15.4	17.6	24.0	25.7	28.3	7 15.33	+ 0.20	. .	+10.28	11 7 25.81	− 0.11
	23	XI, 4	F.	31.0	34.0	35.8	42.7	44.8	47.0	54.2	55.9	59.0	16 44.93	− 0.23	. .	+10.28	11 16 54.98	− 1.16
	24	XI, 10	F.	. .	. .	56.9	59.5	1.9	4.6	6.9	. .	. .	37 1.96	− 0.21	. .	+10.28	11 37 12.03	− 1.21
	25	XI, 11	F.	18.8	21.5	23.4	30.4	32.6	34.8	42.2	44.0	46.8	40 32.72	− 0.23	. .	+10.29	11 40 42.78	− 1.19
	26	o Virginis . . .	F.	26.4	29.0	30.6	36.9	38.9	41.0	47.1	48.7	51.2	58 38.87	− 0.31	+10.30	+10.29	11 58 48.85	− 0.03
	27	4 Draconis . . .	F.	15.1	28.0	35.3	5.6	15.5	25.5	55.8	3.5	16.4	6 15.63	− 1.12	. .	+10.29	12 6 24.80	− 0.43
	28	β Corvi	F.	24.0	26.8	28.7	35.2	. .	39.8	46.4	48.0	50.8	27 37.46	− 0.24	+10.26	+10.29	12 27 47.51	− 0.01
	29	12 Canum Venat. .	F.	44.3	47.6	49.6	57.4	. .	2.7	10.5	12.5	15.7	50 0.04	− 0.41	+10.33	+10.29	12 50 9.92	− 0.04
	30	θ Virginis . . .	F.	4.6	7.3	8.8	14.8	. .	18.8	25.0	26.6	29.0	3 16.86	− 0.28	+10.35	+10.29	13 3 26.87	− 0.10
	31	Polaris, S. P. . .	F.	. .	. .	1.0	41.0	6.0	43.5	16.0	. .	. .	11 7.48	+ 7.31	. .	+10.29	1 11 27.10	− 0.47
28	32	Sun I, S. . . .	Sk.	28.2	29.9	33.7	35.8	37.9	40.0	42.1	46.3	47.9	27 37.98	− 0.29	. .	+10.67	0 27 48.36	. .
	33	Sun II, N. . . .	Sk.	. .	. .	42.7	44.6	46.7	48.7	50.6	. .	. .	29 46.66	− 0.29	. .	+10.67	0 29 57.04	. .
	34	Polaris	Sk.	. .	. .	26.0	51.0	20.0	48.0	11.0	. .	. .	11 19.20	− 6.79	. .	+10.68	1 11 23.09	− 4.12
	35	β Arietis	Sk.	. .	. .	25.0	27.2	29.2	31.5	33.7	. .	. .	47 29.32	− 0.33	+10.63	+10.68	1 47 39.67	+ 0.07
	36	α Arietis	Sk.	39.5	42.3	43.9	50.5	52.7	54.9	1.7	3.3	5.9	59 52.74	− 0.33	+10.65	+10.69	2 0 3.10	+ 0.02
	37	λ Ursæ Minoris, S.P.	Sk.	. .	. .	51.0	5.0	14.0	29.0	. .	. .	. .	49 15.50	+ 9.99	. .	+10.74	19 49 36.14	− 5.75
	38	15 Argus	Sk.	47.2	49.8	51.5	58.4	0.7	3.0	9.6	11.3	14.0	2 0.61	− 0.25	+10.82	+10.75	8 2 11.10	− 0.13
	39	Groom. 3241, S. P.	Sk.	49.9	45.5	31.5	25.5	18.0	11.9	5.2	51.8	47.5	30 19.60	+ 0.29	. .	+10.75	20 30 30.64	+ 1.49
	40	Uranus. . . .	Sk.	. .	. .	. .	. .	. .	. .	24.4	26.0	28.7	36 15.72	− 0.39	. .	+10.75	8 36 26.08	. .
	41	ι Ursæ Majoris (R.)	Sk.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	42	κ Cancri	Sk.	33.3	35.9	37.4	43.7	45.7	47.8	54.0	55.6	58.3	0 45.74	− 0.36	+10.80	+10.76	9 0 56.14	− 0.05
	43	1 Draconis . . .	Sk.	. .	. .	27.0	41.6	55.7	9.6	25.0	. .	. .	18 55.78	− 1.67	. .	+10.76	9 19 4.87	− 0.85
	44	Durch. 37°, 2005 .	Sk.	. .	. .	7.5	10.2	12.6	15.5	17.7	. .	. .	27 12.70	− 0.47	. .	+10.76	9 27 22.99	− 1.49
	45	IX, 5	Sk.	26.6	29.7	31.5	38.7	41.4	44.0	50.9	52.7	55.7	40 41.24	− 0.22	. .	+10.76	9 40 51.78	− 0.89
	46	μ Leonis	Sk.	12.9	15.7	17.4	24.3	26.7	28.9	35.7	37.5	40.2	45 26.59	− 0.42	+10.76	+10.76	9 45 36.93	− 0.04
	47	Moon I, N. . .	Sk.	18.2	20.8	22.3	29.0	31.2	33.2	40.0	41.5	44.0	59 31.13	− 0.38	. .	+10.76	9 59 41.51	+64.42
	48	Weisse 338 . .	Sk.	26.6	29.3	30.6	36.9	38.9	40.9	47.0	48.6	51.2	20 38.89	− 0.34	. .	+10.77	10 20 49.32	− 1.18
	49	X, 9	Sk.	30.4	33.6	35.7	43.0	45.3	47.7	54.8	56.6	0.2	28 45.26	− 0.22	. .	+10.77	10 28 55.81	− 1.04
	50	X, 12	Sk.	54.4	57.4	58.9	5.8	8.0	10.1	16.8	18.7	21.5	36 7.96	− 0.25	. .	+10.77	10 36 18.48	− 1.00

4, 7, 21, 27, 34, 43, 47. Bisections at sets B and D.
22. Bisections at wires II–VII.
24. Wire B used.
31. Wire IV in R. A. reduced for 31ˢ.
41. Bisections at wires B_1, C_3, and VI.

Number.	Circle Division	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	290 40	10 8.8	6.7	3.8	5.0	37	780	755	. .	. .	. .	76.2	69 16 49.2	. .	+ 2 35.7	120 25 46.1	− 9.0
2	295 14	0.7	3.3	0.5	3.0	34	885	855	. .	. .	. .	76.2	64 42 0.7	. .	+ 2 5.0	115 50 26.9	− 8.8
3	281 32	8.2	7.6	2.7	4.2	36	. .	400	. .	360	. .	76.2	78 24 23.0	42.5	+ 4 41.9	129 35 31.1	− 9.4
4	346 6	13.5	10.0	6.6	6.3	34	226	. .	296	. .	340	75.4	13 49 58.9	. .	+ 14.2	64 56 34.3	
5	340 20	3.0	1.5	27.2	0.5	36	. .	460	. .	460	. .	75.4	19 36 23.7	51.2	+ 20.6	70 43 5.5	
7	170 18	18.5	16.2	11.5	13.1	35	880	. .	. .	. .	880	75.4	189 38 28.9	. .	+ 10.1	41 27 42.0	− 2.5
8	332 14	9.0	6.0	2.2	5.8	37	. .	282	. .	268	. .	75.4	27 42 41.3	. .	+ 31.1	78 49 33.6	+ 0.6
9	312 56	1.5	28.6	28.5	28.4	33	. .	. .	. .	220	156	75.4	46 59 32.5	. .	+ 1 3.4	98 6 57.1	+ 3.7
10	0 24	10.5	8.6	5.2	7.4	36	. .	. .	. .	540	508	75.4	359 32 33.1	. .	− 0.5	50 38 53.8	+ 6.7
11	345 24	10.6	7.0	3.2	7.0	35	. .	086	. .	006	. .	75.4	14 32 8.4	. .	+ 15.4	65 38 45.0	− 0.5
12	281 32	12.5	10.3	5.0	7.0	35	. .	126	. .	100	. .	75.4	78 24 10.8	49.9	+ 4 35.4	129 35 7.4	−10.1
13	206 14	6.2	5.4	29.7	0.2	33	. .	. .	. .	. .	700	75.4	153 41 43.9	. .	− 28.7	77 25 5.8	+ 0.6
14	341 32	10.1	8.0	2.8	5.3	36	. .	. .	. .	996	990	75.4	18 24 38.3	. .	+ 19.3	69 31 18.8	0.0
15	330 46	9.4	8.1	3.6	6.2	35	. .	. .	. .	220	140	75.4	29 10 10.7	. .	+ 32.4	80 17 4.3	− 3.3
16	323 52	12.0	9.6	5.0	7.7	39	. .	. .	. .	110	100	75.4	36 5 12.5	. .	+ 42.4	87 12 16.1	− 4.9
17	316 20	8.7	9.0	0.2	5.4	32	. .	. .	. .	620	626	75.4	43 35 30.4	. .	+ 55.3	94 42 46.9	− 6.3
18	316 16	17.0	14.7	11.0	15.3	32	. .	. .	. .	054	024	75.4	43 39 30.1	. .	+ 55.4	94 46 46.7	− 6.4
19	332 16	11.2	9.3	4.6	6.9	36	488	486	. .	. .	. .	75.4	27 40 31.1	. .	+ 39.5	78 47 22.8	+ 0.5
20	306 50	9 28.5	26.5	21.4	26.4	35	. .	112	. .	106	. .	75.4	53 5 57.9	. .	+ 1 17.3	104 13 36.4	− 7.8
21	156 24	10 11.5	9.0	3.9	6.3	33	980	. .	. .	. .	930	75.4	203 31 52.2	. .	+ 25.3	28 34 3.5	− 2.2
22	197 36	16.0	14.8	8.4	8.6	31	. .	856	. .	. .	814	75.4	162 19 24.1	. .	− 18.6	68 47 15.5	+ 1.6
23	292 52	0.4	4.0	29.7	2.4	34	. .	396	. .	334	. .	75.4	67 3 53.9	48.0	+ 2 16.8	118 12 31.9	− 8.9
24	284 38	17.4	14.3	10.0	12.6	30	. .	. .	. .	480	420	75.4	75 19 37.6	. .	+ 3 38.7	126 29 37.5	− 8.8
25	291 16	9.2	6.2	2.7	4.3	32	. .	. .	. .	430	404	75.4	68 39 26.7	. .	+ 2 27.9	119 48 15.8	− 8.8
26	330 28	14.6	10.7	7.0	10.1	31	. .	362	. .	358	. .	75.4	29 27 15.6	. .	+ 32.9	80 34 9.7	+ 0.7
27	39 20	2.5	29.0	25.5	26.8	32	924	924	. .	928	950	75.4	320 35 27.7	. .	− 47.8	11 41 1.1	− 1.9
28	298 22	0.6	28.4	23.0	27.2	35	. .	102	. .	112	. .	75.4	61 33 59.4	49.2	+ 1 47.0	112 42 7.6	+ 1.5
29	0 2	6.1	4.1	0.5	1.5	34	. .	200	. .	140	. .	75.4	359 53 51.2	. .	− 0.1	51 0 12.3	+ 0.5
30	316 12	9 29.6	26.4	23.0	26.8	38	. .	394	. .	384	. .	75.4	43 44 49.0	. .	+ 55.9	94 52 6.1	− 0.3
31	52 22	10 4.5	2.7	28.5	29.3	31	820	806	822	820	812	75.4	307 33 13.0	46.2	− 1 16.0	358 33 18.2	− 3.0
32	323 54	9 23.5	23.5	18.5	20.5	34	562	610	. .	. .	. .	75.4	36 1 45.0	. .	+ 42.5	87 8 48.7	
33	324 26	10 4.6	6.7	0.5	3.3	33	. .	. .	. .	471	320	75.4	35 29 40.7	49.8	+ 41.6	86 36 43.5	
34	49 40	9 29.4	0.5	26.1	23.4	36	. .	723	. .	730	. .	75.4	310 16 25.1	. .	− 1 8.5	1 21 37.8	− 0.6
35	341 14	10 10.0	8.6	4.0	6.0	33	. .	. .	. .	908	902	75.4	18 41 51.5	. .	+ 19.6	69 48 32.3	+ 0.1
37	343 54	9.0	11.0	4.6	6.0	32	. .	290	. .	220	. .	75.4	16 1 26.4	54.3	+ 16.6	67 8 4.2	+ 0.6
38	82 6	12.1	11.0	7.5	6.7	35	075	990	030	. .	. .	75.6	307 50 11.0	49.0	− 1 15.2	358 55 17.0	− 0.1
39	247 8	16.3	15.9	8.0	10.9	35	. .	632	. .	670	. .	75.6	62 48 23.4	. .	+ 1 53.4	113 56 38.0	− 1.7
40	65 54	12.9	8.9	3.6	5.4	34	. .	729	. .	790	. .	75.6	291 2 3.9	. .	− 2 31.4	342 5 53.7	+ 0.6
41	340 20	3.4	3.3	27.1	29.5	34	. .	. .	. .	840	800	75.6	19 35 59.4	. .	+ 20.9	70 42 41.5	
42	170 18	17.2	16.1	10.6	9.8	36	0.3	. .	006	. .	018	75.6	189 38 29.8	. .	+ 10.0	41 27 41.4	− 2.8
43	332 14	7.4	8.1	1.3	3.6	37	. .	307	. .	240	. .	75.6	27 42 40.8	. .	+ 30.9	78 49 32.9	0.0
44	42 54	13.9	10.4	4.0	6.0	32	133	. .	. .	. .	165	75.6	317 1 26.3	. .	− 54.8	8 6 52.7	− 0.6
45	358 34	10.5	10.0	4.0	4.2	35	. .	. .	. .	650	630	75.6	1 22 18.6	. .	+ 1.4	52 28 41.2	+ 8.2
46	288 10	11.0	11.5	4.2	5.2	36	. .	480	. .	320	. .	75.6	71 46 30.0	. .	+ 2 57.0	122 55 48.2	−10.0
47	347 38	13.0	10.9	4.2	6.0	32	. .	114	. .	083	. .	75.6	12 17 25.1	46.2	+ 12.8	63 23 59.1	− 0.7
48	338 20	10.9	9.2	2.5	5.4	34	. .	490	600	643	. .	75.6	21 34 44.8	. .	+ 23.3	72 41 29.3	
49	225 44	14.5	13.3	7.5	8.0	33	. .	809	. .	770	. .	75.6	34 11 53.2	. .	+ 40.2	85 18 54.6	− 4.5
50	287 58	18.0	17.3	10.1	12.1	32	. .	881	. .	742	. .	75.6	71 57 41.5	. .	+ 2 59.6	123 7 2.3	− 9.8
51	296 46	9.0	8.0	1.1	3.6	33	. .	325	. .	342	. .	75.6	63 9 40.6	. .	+ 1 56.3	114 17 58.1	− 9.0

No.	Barom.	At. Ther.
	in.	°
3	30.10	46.0
5	29.86	55.0
32	29.89	54.0
33	29.87	54.0
40	29.89	53.5
47	29.90	52.0
51	30.07	48.3
1	30.04	53.0
37	30.06	51.0
42	30.10	48.3

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
4	−13 3.6	+ 15 7.9	. .	+ 2 4.3
5	− 0.2	. . .	. .	− 0.2
32	− 5.1	− 16 2.6	. .	− 16 7.7
33	− 5.1	+ 16 2.6	. .	+ 15 57.5
40	− 0.2	. . .	. .	− 0.2
47	−19 50.8	+ 14 52.3	. .	− 4 58.5

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Mar. 28	1	X, 15	Sk.	46.8	49.7	51.6	..	..	..	11.2	13.0	16.2	41 1.42	— 0.22	. .	+10.77	10 41 11.97	— 1.08
	2	δ Leonis	Sk.	2.3	5.1	6.6	13.3	15.5	17.6	24.0	25.7	28.5	7 15.40	— 0.40	+10.85	+10.77	11 7 25.77	— 0.14
	3	δ Crateris	Sk	..	..	49.9	51.4	53.4	55.4	57.5	..	..	12 53.34	— 0.29	+10.67	+10.78	11 13 3.83	+ 0.01
	4	XI, 5	Sk.	..	..	4.6	6.6	9.0	11.5	14.0	..	..	22 9.14	— 0.23	.	+10.78	11 22 19.69	— 1.17
	5	XI, 8	Sk.	..	..	14.1	16.3	18.5	20.7	23.0	..	..	30 18.52	— 0.26	. .	+10.78	11 30 29.04	— 1.17
	6	XI, 10	Sk.	46.0	49.1	51.2	58.9	1.3	4.0	11.6	13.4	16.7	37 1.36	— 0.21	.	+10.78	11 37 11.93	— 1.22
	7	Jupiter I, S.	Sk.	12.1	14.7	16.3	..	..	..	32.4	34.0	36.8	45 24.38	— 0.3	. .	+10.78	11 45 34.82	. .
	8	Jupiter II, N.	Sk.	..	..	23.1	25.2	27.3	29.6	31.5	..	..	45 27.34	— 0.34	. .	+10.78	11 45 37.78	. .
29	9	β Geminorum	E.	12.4	15.4	17.0	23.9	26.3	28.7	35.5	37.4	40.3	37 26.32	— 0.41	+10.88	+10.83	7 37 36.74	— 0.08
	10	φ Geminorum	E.	..	..	32.5	34.9	37.2	39.5	41.8	..	..	45 37.18	— 0.41	+10.88	+10.83	7 45 47.60	— 0.13
	11	λ Ursæ Minoris, S. P.	E.	..	..	3.5	16.0	26.5	37.5	..	..	..	49 26.62	+ 5.17	. .	+10.83	19 49 42.02	— 0.33
	12	Uranus I, C.	E.	59.2	1.9	3.5	..	..	..	21.0	22.6	25.2	36 12.23	— 0.3	. .	+10.83	8 36 22.67	. .
	13	Uranus II	E.	..	..	8.2	10.3	12.5	14.7	16.8	..	..	36 12.50	— 0.36	. .	+10.84	8 36 22.95	. .
	14	ε Hydræ	E.	43.9	46.6	48.2	54.4	56.4	58.5	4.6	6 2	8.8	39 56.40	— 0.37	+10.90	+10.84	8 40 6.87	— 0.17
	15	κ Cancri	E.	33.1	35.8	37.4	43.6	45.7	47.8	54.0	55.6	58.2	0 45.69	— 0.38	+10.85	+10.84	9 0 56.15	— 0.02
	16	α Hydræ	E.	1.7	4.3	5.7	12.0	14.0	16.0	22.5	23.9	26.5	21 14.07	— 0.35	+10.80	+10.84	9 21 24.56	— 0.05
	17	Anonymous	E.	17.3	20.0	22.0	..	..	..	..	..	..	27 32.81	— 0.43	. .	+10.84	9 27 43.22	— 1.49
	18	Anonymous	E.	27.2	30.4	32.4	..	..	..	..	..	..	27 42.64	— 0.43	. .	+10.84	9 27 53.12	— 1.49
	19	Anonymous	E.	39.5	43.0	45.0	50.3	52.9	55.5	58.0	1.0	..	40 55.56	— 0.30	. .	+10.84	9 41 6.10	— 0.88
	20	IX, 8	E.	2.3	0.0	7.0	15.9	18.6	21.3	29.3	31.3	34.7	41 18.59	— 0.30	. .	+10.85	9 41 29.14	— 0.89
	21	IX, 12	E.	26.0	29.4	31.2	39.1	42.0	44.5	52.6	54.6	58.0	41 41.96	— 0.30	. .	+10.85	9 44 52.51	— 0.89
	22	X, 4	E.	12.5	16.0	18.0	25.9	28.6	31.4	39.2	41.2	44.6	14 28.60	— 0.30	. .	+10.85	10 14 39.15	— 1.00
	23	X, 5	E.	34.0	37.6	38.0	46.0	48.4	51.0	58.3	0.2	3.4	18 48.58	— 0.3	. .	+10.85	10 18 59.12	— 1.00
	24	ρ Leonis	E.	48.0	51.5	53.0	59.2	1.3	3.4	9.7	11.2	13.7	26 1.32	— 0.31	+10.70	+10.85	10 26 11.83	— 0.01
	25	X, 8	E.	..	..	42.0	..	17.4	50.0	53.1	..	..	27 47.45	— 0.31	. .	+10.85	10 27 58.00	— 1.05
	26	X, 11	E.	34.0	37.2	39.0	46.5	..	51.5	59.0	1.0	4.0	31 49.02	— 0.31	. .	+10.85	10 31 59.56	— 1.04
	27	X, 13	E.	.	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	28	l Leonis	E.	16.5	19.0	20.6	26.9	28.9	31.0	37.3	38.8	41.5	42 28.94	— 0.35	+10.75	+10.85	10 42 39.20	0.00
	29	Moon I, N.	E.	0.7	3.3	4.8	11.0	13.3	15.5	..	..	..	46 13.38	— 0.30	. .	+10.86	10 46 23.86	+62.53
30	30	Sun I, N.	F.	41.2	44.0	45.7	51.7	53.8	55.8	1.9	3.6	6.0	34 53.74	— 0.48	. .	+11.01	0 35 4.27	. .
	31	Sun II, S.	F.	50.3	53.0	54.4	0.5	2.6	4.7	10.8	12.4	14.9	37 2.62	— 0.48	. .	+11.01	0 37 13.15	. .
	32	Polaris	F.	..	..	..	..	..	44.0	11.0	..	..	11 18.35	— 4.18	. .	+11.01	1 11 25.18	— 1.56
	33	Uranus, C.	F.	..	..	..	..	..	..	..	..	..	. . .	. .	. .	. .	. . .	. .
	34	κ Cancri	F.	33.0	35.6	37.3	43.5	45.6	47.7	54.0	55.5	58.0	0 45.58	— 0.47	+11.04	+11.03	9 0 56.14	— 0.02
	35	ι Draconis	F.	28.3	46.9	57.2	40.3	55.3	10.0	53.2	4.4	22.4	18 55.33	— 0.92	. .	+11.03	9 19 5.44	— 0.07
	36	Durch. 37°, 2005	F.	57.1	0.2	2.3	9.9	12.5	15.1	22.9	24.9	28.0	27 12.54	— 0.50	. .	+11.03	9 27 23.07	— 1.48
	37	ε Leonis	F.	19.0	22.0	23.5	30.3	32.5	34.7	41.4	43.0	46.0	38 32.49	— 0.48	+10.90	+11.03	9 33 43.04	— 0.02
	38	79 Draconis, S. P.	F.	..	..	17.0	9.9	2.8	55.7	48.8	..	..	51 2.84	— 0.20	. .	+11.03	21 51 13.67	+ 0.32
	39	α Leonis	F.	..	..	..	..	..	..	..	..	..	. . .	. .	. .	. .	. . .	. .
	40	Weisse 5	F.	28.7	31.3	32.8	39.0	41.0	43.0	49.3	51.0	53.6	2 41.08	— 0.47	. .	+11.03	10 2 51.64	— 1.10
	41	Weisse 83	F.	30.6	33.3	34.8	41.0	43.0	45.0	51.4	53.0	55.5	6 43.07	— 0.47	. .	+11.03	10 6 53.63	— 1.18
	42	Anonymous	F.	29.0	31.6	33.0	39.2	41.3	43.4	49.7	51.3	53.9	14 41.38	— 0.47	. .	+11.03	10 14 51.91	— 1.20
	43	Anonymous	F.	55.9	57.6	59.2	5.3	7.4	9.5	15.7	17.3	19.8	16 7.42	— 0.47	. .	+11.03	10 16 17.98	— 1.21
	44	Anonymous	F.	..	..	..	..	..	..	..	..	..	. . .	. .	. .	.	. . .	. .
	45	Anonymous	F.	..	..	57.5	59.0	1.7	3.7	5.8	..	..	36 1.66	— 0.45	. .	+11.03	10 36 12.24	— 1.12
	46	l Leonis	F.	..	..	24.5	26.7	28.8	30.8	32.9	..	..	42 28.74	— 0.47	+11.01	+11.03	10 42 39.30	+ 0.02
	47	α Ursæ Majoris	F.	22.6	23.0	21.4	44.7	49.1	53.0	7.0	10.2	15.8	55 49.16	— 0.57	. .	+11.03	10 55 59.62	+ 0.05
	48	XI, 3	F.	..	..	17.9	20.2	22.8	25.0	27.5	..	..	12 22.68	— 0.44	. .	+11.03	11 12 33.27	— 1.14
	49	XI, 4	F.	30.7	33.6	35.3	42.2	44.4	46.7	13.9	45.7	18.4	16 44.54	— 0.41	. .	+11.03	11 16 55.13	— 1.15
	50	XI, 6	F.	17.5	20.6	22.6	30.0	32.7	35.0	42.6	44.7	17.8	26 32.61	— 0.44	. .	+11.03	11 26 43.20	— 1.19

17. Probably five revolutions wrong, and Apparent North-Polar Distance 52° 33′ 25″.9.
18. Probably five revolutions wrong, and Apparent North-Polar Distance 52° 33′ 27″.9.
19, 45. Wire A used.
35, 38. Bisections at sets B and D.
41. Wire B used.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1																	
2	342 16	10 13.5	12.0	6.0	8.4	36	. .	460	. .	440	. .	75.6	17 40 33.2	. .	+ 18.9	68 47 13.3	− 0.4
3	306 58	13.5	12.5	5.9	8.3	35	. .	. .	. .	385	370	75.6	52 58 16.9	. .	+ 1 18.5	104 5 56.6	− 0.1
4	289 56	13.4	11.7	4.1	6.7	37	. .	. .	. .	990	919	75.6	70 0 55.1	. .	+ 2 41.8	121 9 58.1	− 9.3
5	297 20	11.2	9.6	2.5	4.9	35	. .	. .	. .	820	776	75.6	62 36 20.2	. .	+ 1 54.1	113 44 35.5	− 9.1
6	284 38	19.8	17.2	7.9	13.0	39	. .	. .	. .	633	559	75.6	75 19 25.7	. .	+ 3 43.2	126 29 30.1	− 9.2
7	324 20	8.3	7.6	1.5	2.2	39	602	612	. .	. .	. .	75.6	35 37 16.0	. .	+ 42.6	86 44 19.8	
8	324 20	8.3	7.6	1.5	2.2	36	. .	. .	. .	700	718	75.6	35 36 32.3	40.8	+ 42.6	86 43 36.1	
9	349 22	4.5	5.0	28.5	29.7	33	. .	255	. .	215	. .	75.6	10 33 35.9	46.0	+ 11.0	61 40 8.1	− 0.2
10	348 8	12.5	11.4	7.3	8.2	33	930	900	. .	. .	. .	75.6	11 47 54.0	. .	+ 12.3	62 54 27.5	− 0.7
11	52 6	7.0	5.2	2.0	1.3	35	335	. .	450	. .	. .	75.6	307 50 10.4	. .	− 1 15.9	358 55 15.7	− 1.1
12	340 20	6.1	4.2	0.0	1.6	34	. .	000	. .	985	. .	75.6	19 35 48.5	. .	+ 21.1	70 42 30.8	
13																	
14	327 56	9.5	8.5	3.6	5.5	35	. .	. .	. .	485	415	75.6	32 0 14.9	. .	+ 37.1	83 7 13.2	+ 0.4
15	332 14	8.5	7.0	3.2	4.5	37	. .	145	. .	090	. .	75.6	27 42 39.1	. .	+ 31.2	78 49 31.5	− 1.4
17	312 56	8.5	6.7	2.5	5.7	32	. .	520	. .	500	. .	75.6	46 59 28.5	. .	+ 1 3.8	98 6 53.5	0.0
17	358 28	11.7	9.6	6.5	5.9	35	675	635	. .	. .	. .	75.6	1 28 19.3	. .	+ 1.5	52 34 42.0	+ 6.4
18	358 28	11.7	9.6	6.5	5.9	35	. .	. .	. .	795	750	75.6	1 28 21.8	. .	+ 1.5	52 34 44.5	+ 6.4
19	281 2	8.0	6.8	2.7	2.2	37	. .	. .	. .	200	180	75.6	78 52 6.0	. .	+ 4 54.7	130 3 21.9	−10.8
20	281 2	8.0	6.8	2.7	2.2	37	. .	. .	. .	690	670	75.6	78 54 46.7	. .	+ 4 55.9	130 6 3.8	−10.8
21	281 32	7.7	7.0	1.2	2.3	34	. .	800	. .	780	. .	75.6	73 24 1.9	. .	+ 4 43.4	129 35 6.5	−10.7
22	282 4	10.0	8.8	3.5	4.6	40	. .	450	. .	350	. .	75.6	77 53 30.0	. .	+ 4 32.4	129 4 23.6	−10.4
23	288 14	6.3	5.5	0.5	2.2	34	. .	465	. .	445	. .	75.6	71 41 55.9	. .	+ 2 59.2	122 51 16.3	− 9.9
24	331 0	5.0	3.0	29.0	0.3	34	430	420	. .	. .	. .	75.6	28 55 53.6	. .	+ 33.1	80 2 47.9	+ 0.1
25	281 32	9.5	8.3	2.3	2.2	36	. .	105	. .	065	. .	75.6	78 24 22.8	. .	+ 4 44.5	129 35 28.5	−10.3
26	286 2	7.8	6.6	2.3	1.5	36	. .	120	. .	075	. .	75.6	73 54 22.0	. .	+ 3 24.9	125 4 8.1	−10.6
27	294 26	13.5	11.0	8.1	8.0	34	. .	030	. .	940	. .	75.6	65 29 55.3	. .	+ 2 10.9	116 38 27.4	− 9.4
28	332 16	13.9	12.5	9.0	7.5	36	. .	130	. .	075	. .	75.6	27 40 28.5	. .	+ 31.5	78 47 21.2	− 1.0
29	333 20	5.5	3.6	29.7	0.5	32	. .	860	115	460	. .	75.6	26 35 31.5	37.5	+ 30.1	77 42 25.8	
30	325 14	8.0	9.5	7.6	7.3	38	654	666	. .	. .	. .	75.0	34 43 3.6	58.5	+ 39.8	85 50 4.6	
31	324 42	3.4	4.0	0.3	1.3	39	. .	. .	. .	100	086	75.0	35 15 6.1	. .	+ 40.5	86 22 7.8	
32																	
33	340 20	4.3	2.2	26.6	29.5	33	. .	. .	. .	608	604	75.6	19 35 40.7	. .	+ 20.7	70 42 22.6	
34	332 14	7.4	5.7	0.0	2.5	37	. .	370	. .	370	. .	75.6	27 42 41.1	50.5	+ 30.6	78 49 32.9	+ 0.1
35	42 54	3.5	0.1	24.7	27.5	32	818	814	. .	806	810	75.6	317 1 26.7	. .	− 54.2	8 6 53.7	+ 0.8
36	355 34	6.7	4.0	29.0	1.1	35	. .	980	. .	964	. .	75.6	1 22 18.7	. .	+ 1.4	52 28 41.3	+ 6.6
37	345 24	6.7	3.2	29.3	2.5	35	. .	390	. .	386	. .	75.6	14 32 9.9	. .	+ 15.1	65 38 46.2	+ 1.0
38	67 52	2.9	28.9	23.9	26.3	27	680	694	. .	. .	. .	75.6	292 2 6.5	. .	− 2 23.0	343 6 4.7	+ 0.7
39	333 38	7.5	4.2	29.5	1.9	35	740	750	. .	. .	. .	75.6	26 18 15.3	. .	+ 28.8	77 25 5.3	+ 0.3
40	331 14	5.0	2.3	28.0	0.2	29	. .	. .	. .	236	232	75.6	28 40 34.4	. .	+ 31.9	79 47 27.5	− 2.5
41	331 14	5.0	2.3	28.0	0.2	35	. .	. .	. .	218	240	75.6	28 44 39.3	. .	+ 32.0	79 51 32.5	− 2.7
42	330 46	7.0	5.1	0.6	3.7	35	340	360	. .	. .	. .	75.6	29 10 10.1	. .	+ 32.5	80 17 3.8	− 3.1
43	330 42	2.5	29.3	24.5	29.0	32	. .	. .	. .	474	. .	75.6	29 13 21.4	49.8	+ 32.6	80 20 15.2	− 3.2
44	329 10	10.3	7.9	3.0	3.3	36	. .	. .	. .	320	320	75.6	30 46 27.6	49.8	+ 34.8	81 53 23.6	− 3.7
45	314 38	10.0	7.8	2.7	4.1	37	. .	. .	. .	828	830	75.6	45 16 17.4	. .	+ 58.9	96 23 37.5	− 7.9
47	332 16	3.6	1.8	27.2	29.4	36	. .	. .	. .	896	890	75.6	27 40 30.8	. .	+ 30.6	78 47 22.6	+ 0.5
47	23 28	9.5	7.1	3.9	2.3	35	. .	006	. .	006	. .	75.6	336 28 7.3	. .	− 25.4	27 34 3.1	− 1.5
48	286 2	3.3	0.9	26.3	29.7	37	. .	896	. .	894	. .	75.6	71 54 45.0	. .	+ 2 57.2	123 4 3.4	− 9.8
49	292 52	5.4	2.1	26.9	29.8	34	. .	336	. .	364	. .	75.6	67 3 51.8	47.8	+ 2 17.4	118 12 30.4	− 9.6
50	285 36	6.0	1.9	28.4	1.9	39	. .	364	. .	338	. .	75.6	74 21 9.3	. .	+ 3 26.1	125 30 56.6	− 9.8

No.	Barom.	At. Ther.
	in.	°
8	30.12	46.5
9	30.12	49.0
29	30.13	41.5
30	30.05	53.0
34	30.00	53.5
43	30.00	52.0
44	30.00	52.0
49	30.00	51.5

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
7	− 1.2	− 21.8	. .	− 23.0
8	− 1.2	+ 21.8	. .	+ 20.6
12	− 0.2	. .	. .	− 0.2
29	−24 4.5	+ 14 47.9	. .	− 9 16.6
30	− 5.0	+ 16 1.6	. .	+ 15 56.6
31	− 5.1	− 16 1.6	. .	− 16 6.7
33	− 0.2	. .	. .	− 0.2

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Mar. 30	1	Moon I.	F.	32.7	35.3	36.8	43.0	45.1	47.2	53.6	55.2	57.8	30 45.19	− 0.40	. .	+11.03	11 30 55.76	+61.26
	2	β Leonis	F.	16.0	18.8	20.4	26.8	28.7	30.9	37.2	38.8	41.5	42 28.79	− 0.47	+11.00	+11.03	11 42 39.35	− 0.05
	3	Jupiter I, S.	F.	17.7	20.5	22.0	. .	. .	. .	38.2	39.7	42.3	44 30.07	− 0.46	. .	+11.03	11 44 40.64	. .
	4	Jupiter II, N.	F.	. .	. .	29.3	31.3	33.3	35.3	37.4	. .	. .	44 33.32	− 0.40	. .	+11.03	11 44 43.80	. .
	5	η Virginis	F.	6.2	8.7	10.3	16.5	18.5	20.5	26.8	28.1	30.8	13 18.49	− 0.46	+10.92	+11.03	12 13 29.06	+ 0.09
	6	β Corvi	F.	23.7	26.5	28.0	34.7	36.9	39.0	45.1	47.4	50.2	27 36.90	− 0.45	+11.00	+11.03	12 27 47.48	− 0.07
	7	12 Canum Venat.	F.	43.0	47.0	49.0	56.8	59.5	1.9	10.0	12.0	15.0	49 59.42	− 0.50	+11.07	+11.03	12 50 9.95	− 0.04
	8	θ Virginis	F.	4.0	6.7	8.0	14.4	16.4	18.4	24.6	26.0	28.0	3 16 34	− 0.40	+11.09	+11.03	13 13 26.91	− 0.10
	9	Polaris, S. P.	F.	. .	. .	6.0	36.0	10.0	47.5	. .	. .	. .	11 11.90	+ 2.48	. .	+11.03	1 11 25.41	− 1.25
Apr. 3	10	α Leonis	F.	17.9	20.5	22.0	28.1	30.3	32.3	38.7	40.3	42.9	1 30.33	− 0.42	+10.85	+10.85	10 1 40.76	− 0.04
	11	Weisse 83	F.	30.0	33.3	34.9	41.0	43.0	45.2	51.5	53.0	55.5	6 43.11	− 0.42	. .	+10.85	10 6 53.54	− 1.15
	12	Anonymous	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
4	13	β Cephei, S. P.	S.	. .	. .	0.1	54.2	48.1	42.6	36.2	. .	. .	26 48.24	− 0.70	. .	+10.96	21 26 58.41	+ 0.07
	14	Anonymous	S.	. .	. .	23.6	25.6	28.3	30.9	33.2	. .	. .	33 28.32	− 0.42	. .	+10.96	9 38 38.80	− 0.77
	15	Anonymous	S.	. .	. .	13.0	46.0	48.8	51.3	54.0	. .	. .	41 48.80	− 0.42	. .	+10.96	9 41 59.34	− 0.70
	16	IX, II	S.	8.7	10.5	15.1	17.6	20.0	22.3	24.7	29.3	31.6	44 19.91	− 0.40	. .	+10.96	9 44 30.47	− 0.80
	17	α Leonis.	S.	20.3	21.8	25.0	28.0	30.1	32.3	34.3	38.5	40.0	1 30.13	− 0.34	+11.00	+10.96	10 1 40.75	− 0.04
	18	X, I	S.	. .	. .	16.0	19.3	22.2	24.6	27.4	. .	. .	6 22.02	− 0.42	. .	+10.96	10 6 32.56	− 1.15
	19	Rumker 3155	S.	50.5	53.0	54.5	0.9	3.0	5.1	11.3	12.9	15.4	15 2.96	− 0.34	. .	+10.96	10 15 13.58	− 1.10
	20	Anonymous	S.	. .	. .	. .	. .	53.4	55.6	57.8	. .	. .	18 53.54	− 0.35	. .	+10.96	10 19 4.15	− 1.10
	21	Weisse 404	S.	38.7	41.4	43.0	49.0	51.0	53.0	59.2	0.8	3.3	23 51.04	− 0.30	. .	+10.96	10 24 1.64	− 1.15
	22	α Ursæ Majoris (R.)	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	23	δ Leonis	S.	2.1	4.9	6.4	13.0	15.2	17.4	24.0	25.5	28.5	7 15.22	− 0.33	+10.93	+10.96	11 7 25.85	− 0.04
10	24	γ Aquilæ	E.	52.9	55.4	57.0	3.2	5.3	7.3	13.5	15.1	17.8	40 5.28	− 0.30	+11.28	+11.28	19 40 16.26	+ 0.03
	25	α Aquilæ	E.	14.9	17.4	19.0	25.2	27.2	29.2	35.4	37.0	39.6	44 27.21	− 0.33	+11.34	+11.28	19 44 38.16	− 0.02
	26	ε Draconis	E.	47.4	54.0	59.3	17.0	22.9	29.1	47.0	51.3	58.7	48 23.07	+ 0.20	. .	+11.28	19 48 34.55	+ 0.20
	27	α Cygni	E.	39.0	42.8	45.0	53.5	56.4	59.3	7.0	10.1	13.7	36 56.41	− 0.15	+11.25	+11.28	20 37 7.54	+ 0.05
	28	Moon II, N.	E.	8.8	11.0	13.2	20.1	22.4	24.7	31.5	33.3	36.5	4 22.46	− 0.40	. .	+11.28	21 4 33.34	−72.28
	29	ζ Cygni	E.	. .	. .	. .	. .	. .	. .	32 2	33.9	36.8	7 22.73	− 0.21	+11.27	+11.28	21 7 33.80	+ 0.02
	30	α Piscis Australis	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	31	α Pegasi	F.	4.5	7.0	8.7	15.0	17.2	19.3	25.6	27.2	29.8	58 17.14	− 0.52	+11.50	+11.51	22 58 28.13	− 0.02
	32	Mercury II, C.	F.	31.9	34.4	36.1	42.0	44.1	46.1	52.3	53.8	56.4	42 44.12	− 0.61	. .	+11.51	23 42 55.02	− 0.28
	33	Polaris	F.	. .	. .	15.0	41.0	8.0	32.0	0.0	. .	. .	11 7.20	+ 7.94	. .	+11.51	1 11 26.65	− 0.20
11	34	Sun I, N.	F.	29.0	31.5	33.2	39.3	41.3	43.2	49.5	51.0	53.6	18 41.29	− 0.55	. .	+11.51	1 18 52.25	. .
	35	Sun II	F.	38.8	41.3	42.8	49.0	51.0	53.0	59.3	0.8	3.5	20 51.06	− 0.55	. .	+11.51	1 21 2.02	. .
	36	β Arietis	F.	5.6	8.3	20.2	26.0	28.7	30.9	37.3	39.0	41.6	47 28.69	− 0.40	+11.44	+11.52	1 47 39.72	+ 0.10
	37	α Arietis	F.	38.9	41.7	43.3	50.0	52.2	54.3	1.0	2.7	5.5	59 52.18	− 0.48	+11.40	+11.52	2 0 3.22	+ 0.13
	38	Venus I, N.	F	29.8	32.0	34.0	40.3	42.5	44.5	50.8	52.3	54.9	5 42.41	− 0.55	. .	+11.52	2 5 53.30	+ 0.35
	39	Venus S.	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	40	ζ Persei	F.	46.0	49.3	51.0	58.2	0.6	3.0	10.0	11.9	15.0	46 0.56	− 0.43	+11.57	+11.52	3 46 11.65	− 0.09
	41	ε Tauri	F.	. .	. .	. .	. .	. .	8.0	12.4	13.9	16.7	21 3.71	− 0.50	+11.50	+11.52	4 21 14.73	− 0.05
	42	α Tauri	F.	16.9	19.6	21.2	27.6	29.7	31.8	38.1	39.7	42.4	28 29.67	− 0.51	+11.55	+11.52	4 28 40.68	− 0.05
	43	Moon II	F.	55.5	58.2	59.8	6.3	8.5	10.8	17.4	19.1	21.9	3 8.61	− 0.60	. .	+11.40	22 3 19.41	−71 01
	44	η Aquarii	F.	29.0	31.7	33.3	39.5	41.4	43.5	49.7	51.0	53.6	28 41.41	− 0.53	+11.39	. .		. .
	45	ζ Pegasi	F.	46.4	49.0	50.7	56.8	58.9	1.0	7.2	8.7	11.4	34 58.90	− 0.49	+11.47	. .		. .
	46	Polaris	Sk.	26.0	15.0	17.0	. .	. .	. .	. .	. .	. .	11 2.27	+11.92	. .	+11.85	1 11 26.04	− 0.04
13	47	Sun I, S.	Sk.	50.3	52.0	54.4	0.4	2.7	4.8	11.0	12.0	15.2	26 2.70	− 0.70	. .	+11.86	1 26 13.86	. .
	48	Sun II, N.	Sk.	0.0	2.0	4.0	. .	. .	. .	20.0	22.1	24.8	28 12.35	− 0.70	. .	+11.86	1 28 23.51	. .
	49	Venus I, S.	Sk.	56.0	58.0	0.3	. .	. .	. .	16.8	18.5	21.0	15 8.53	− 0.60	. .	+11.86	2 15 19.73	+ 0.33
	50	Venus II, N.	Sk.	. .	. .	5.0	7.0	9.2	11.3	13.4	. .	. .	15 9.18	− 0.60	. .	+11.86	2 15 20.38	− 0.32

4. Telescope micrometer reading decreased five revolutions in reduction.
11. Wire B used.
13, 14, 16, 26. Bisections at sets B and D.
22. Bisections at wires B_1 and VI.
46. Bisections at D_1, D_2, and D_3.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1																	
2																	
3	324 24	10 2.7	0.7	25.5	29.1	33	210	224	. .	. .	. .	75.6	35 31 32.8	. .	+ 41.8	86 38 35.8	
4	324 24	2.7	0.7	25.5	29.1	35	. .	. .	. .	320	298	75.6	35 30 49.1	. .	+ 41.8	86 37 52.1	
5	321 6	6.2	3.2	28.6	2.2	38	. .	. .	. .	665	655	75.6	38 50 59.8	. .	+ 47.3	89 58 8.3	+ 0.7
6	298 22	3.7	1.3	25.3	29.1	34	. .	824	. .	806	. .	75.6	61 33 57.8	46.0	+ 1 48.2	112 42 7.2	+ 0.5
7	0 2	4.6	2.4	28.8	28.8	34	. .	. .	. .	. .	036	75.6	359 53 48.3	. .	− 0.1	51 0 9.4	− 1.6
8	316 12	9.4	6.0	1.4	3.7	37	850	830	. .	. .	. .	75.6	43 44 49.1	. .	+ 56.4	94 52 6.7	0.0
9	52 22	5.0	2.6	28.5	29.3	31	. .	. .	800	. .	. .	75.6	307 33 13.2	43.3	− 1 16.7	358 38 17.7	− 2.3
10	333 38	9 28.5	25.7	21.7	23.6	36	. .	330	. .	180	. .	75.2	26 18 14.6	. .	+ 29.2	77 25 5.0	+ 0.2
11	331 14	10 4.3	1.1	26.4	0.3	35	. .	196	. .	174	. .	75.2	28 44 37.3	. .	+ 32.5	79 51 31.0	− 2.6
12	329 10	8.0	4.5	0.3	3.3	36	. .	260	. .	276	. .	75.2	30 46 24.0	41.0	+ 35.2	81 53 20.4	− 3.6
13	71 0	8.0	5.2	28.8	2.5	37	394	300	. .	. .	. .	76.4	288 56 41.1	32.5	− 2 55.8	340 0 6.5	+ 0.9
14	288 10	8.0	6.9	0.5	4.4	34	756	. .	. .	. .	702	76.4	71 46 2.4	. .	+ 3 3.0	122 55 26.6	−10.9
15																	
16	291 46	11.5	8.0	2.6	6.8	35	333	. .	. .	. .	060	76.4	68 10 11.8	. .	+ 2 31.1	119 19 4.1	−10.4
17	333 38	2.7	1.5	25.1	29.8	35	. .	. .	. .	700	660	76.4	26 18 12.3	31.8	+ 30.1	87 25 3.6	− 1.2
18	280 52	7.4	5.5	0.0	2.6	34	. .	. .	. .	600	620	76.4	79 3 59.4	. .	+ 5 7.3	130 15 27.9	−11.7
19	332 24	7.3	5.9	0.5	3.5	38	. .	. .	. .	. .	720	76.4	27 33 3.4	. .	+ 31.9	78 39 56.5	− 2.6
20																	
21	323 52	3.1	2.0	27.5	1.2	39	. .	254	. .	212	. .	76.4	36 5 7.4	31.0	+ 44.5	87 12 13.1	− 4.9
22	156 24	9 28.8	26.9	20.7	24.5	34	700	. .	. .	690	. .	76.4	203 31 51.9	. .	+ 26.6	27 34 2.7	− 0.7
23	342 16	10 12.8	10.3	4.5	7.6	36	. .	277	. .	367	. .	76.4	17 40 30.8	30.3	+ 19.5	68 47 11.5	− 1.5
24	331 22	9 26.6	24.5	19.8	22.7	38	. .	820	. .	780	. .	77.0	28 34 54.8	39.0	+ 32.6	79 41 48.6	− 0.2
25	329 36	10 3.1	1.0	26.6	0.5	39	. .	015	. .	985	. .	77.9	30 21 4.8	. .	+ 34.7	81 28 0.7	− 1.7
26	30 58	5.2	3.0	27.2	29.7	34	075	. .	. .	. .	150	77.9	328 57 51.1	. .	− 35.7	20 3 36.6	− 2.3
27	5 52	9 28.5	26.6	23.0	24.3	36	130	. .	. .	. .	105	77.9	353 4 16.6	. .	− 7.3	44 10 30.5	− 1.5
28	293 10	10 1.3	28.5	25.8	27.3	32	080	940	790	550	360	77.9	61 45 11.3	. .	+ 1 51.1	112 53 23.6	
29	350 46	8.0	5.5	0.5	2.5	38	. .	. .	. .	990	960	77.9	9 11 8.8	43.5	+ 9.6	60 17 39.6	+ 0.4
30	293 48	9 23.7	24.0	16.0	21.2	37	. .	. .	. .	192	188	77.9	69 8 28.0	51.9	+ 2 31.7	120 17 20.9	− 1.8
31	335 34	10 2.2	1.7	24.1	0.0	33	. .	. .	. .	830	836	77.9	24 21 45.3	. .	+ 26.4	75 28 32.9	+ 2.7
32	317 16	1.6	1.8	24.7	0.2	33	. .	396	. .	414	. .	77.9	42 39 38.3	54.9	+ 53.3	93 46 52.8	
33	49 40	9 7.2	6.6	26.7	29.3	38	. .	. .	. .	280	292	77.9	310 16 26.2	. .	− 1 8.0	1 21 39.4	− 4.1
34	329 46	10 12.3	12.7	6.6	8.2	37	920	950	. .	. .	. .	77.9	30 10 57.3	. .	+ 33.4	81 17 51.9	
35	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .		. .	58.9	. .	. .	
36	311 14	9 26.9	27.5	23.9	26.8	34	. .	798	. .	800	. .	71.9	18 41 50.4	59.8	+ 19.4	69 48 31.0	− 1.8
37	343 54	10 1.4	3.0	4.3	2.5	32	. .	832	. .	840	. .	71.9	16 1 26.9	. .	+ 16.4	67 8 4.5	+ 0.1
38	333 8	6.7	8.0	1.7	4.5	32	708	. .	. .	. .	528	71.9	26 47 26.0	. .	+ 28.9	77 54 16.1	
39	333 8	6.7	8.0	1.7	4 5	33	. .	296	. .	291	. .	71.9	26 47 36.3	. .	+ 28.9	77 54 25.4	
40	352 34	5.6	6.9	29.2	3.6	38	. .	690	. .	708	. .	71.9	7 22 57.8	63.5	+ 7.4	58 29 25.4	− 0.6
41	333 56	9 14.5	15.6	9.8	12.7	33	. .	. .	. .	316	328	71.9	19 59 15.1	. .	+ 20.6	71 5 56.9	− 1.2
42	337 18	9 25.6	27.1	18.6	22.7	35	. .	330	. .	280	. .	71.9	22 37 55.4	64.0	+ 23.6	73 44 40.2	− 0.1
43																	
44																	
45																	
46	49 40	10 0.6	28.6	23.0	25.5	37	000	100	070	. .	. .	77.0	310 16 33.4	. .	− 1 9.7	1 21 44.9	− 0.2
47	329 56	9.1	8.2	2.2	5.8	31	. .	290	. .	. .	. .	77.0	29 59 11.2	. .	+ 34.1	81 6 6.5	
48	330 28	0.6	27.6	28.1	28.2	32	. .	. .	. .	040	995	77.0	29 27 16.1	50.5	+ 33.5	80 34 10.8	
49	334 2	3.0	2.9	26.0	28.5	33	991	899	. .	. .	. .	77.0	25 53 45.9	. .	+ 28.5	77 0 35.6	
50	334 2	3.0	2.9	26.0	28.5	33	. .	. .	. .	146	101	77.0	25 53 34.1	. .	+ 28.5	77 0 24.8	

No.	Barom.	At. Ther.
	in.	°
6	30.00	49.0
9	29.99	48.0
12	29.85	45.5
14	30.22	34.0
21	30.12	40.0
30	30.10	48.5
32	30.09	52.0
34	30.06	56.0
36	30.05	57.0
40	29.99	60.0
42	29.95	59.5
48	30.53	45.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
3	− 1.2	− 21.8	. .	− 23.0
4	− 1.2	+ 21.8	. .	+ 20.6
28	−51 39.4	+ 16 3.2	. .	− 35 36.2
32	− 7.5	. .	+ 0.9	− 6.6
34	− 4.4	+ 15 59.2	. .	+ 15 54.8
38	− 2.4	+ 5.2	− 0.1	+ 2.7
39	− 2.4	− 5.2	. .	− 7.6
47	− 4.4	− 15 57.8	. .	− 16 2.2
48	− 4.3	+ 15 57.8	. .	+ 15 53.5
49	− 2.3	− 5.4	. .	− 7.7
50	− 2.3	+ 5.4	0.0	+ 3.1

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Apr. 13	1	η Tauri	Sk.	. .	. .	43.0	45.2	47.4	49.5	51.8	. .	. .	39 47.38	− 0.60	+11.92	+11.87	3 39 58.65	− 0.05
	2	ζ Persei	Sk.	46.0	49.0	50.7	58.0	0.4	2.7	9.9	11.8	14.6	40 0.34	− 0.55	+11.90	+11.87	3 46 11.66	− 0.04
	3	15 Argus	Sk.	46.6	49.4	51.0	. .	. .	. .	. .	. .	. .	1 59.99	− 0.86	+11.74	+11.90	8 2 11.03	+ 0.10
	4	Anonymous	Sk.	20.8	22.3	26.6	28.7	30.9	32.9	35.0	39.3	40.9	21 30.82	− 0.59	. .	+11.90	8 21 42.13	− 0.54
	5	Uranus	Sk.	35.9	36.9	38.5	45.0	47.0	49.2	55.7	57.5	0.2	35 47.10	− 0.58	. .	+11.90	8 35 58.42	. .
	6	ε Hydræ	Sk.	43.1	45.7	47.4	53.5	55.5	57.5	3.7	5.2	7.8	39 55.49	− 0.65	+11.80	+11.90	8 40 6.74	− 0.03
	7	Anonymous	Sk.	13.5	16.4	18.4	25.6	28.0	30.5	37.9	39.8	42.6	38 28.08	− 0.94	. .	+11.91	9 38 39.05	− 0.03
	8	IX, 10	Sk.	. .	. .	47.9	50.0	52.2	5 .6	57.0	. .	. .	42 52.34	− 0.88	. .	+11.91	9 43 3.37	− 0.06
	9	IX, 11	Sk.	5.2	8.2	10.0	. .	. .	. .	28.6	30.5	33.3	44 19.30	− 0.01	. .	+11.91	9 44 30.30	− 0.67
	10	Weisse 5	Sk.	27.8	30.4	31.9	38.3	40.2	42.4	48.0	50.0	52.8	2 40.27	− 0.64	. .	+11.91	10 2 51.54	− 1.03
	11	Weisse 83	Sk.	29.9	32.4	34.0	40.2	42.2	44.3	50.5	52.0	54.7	6 42.24	− 0.64	. .	+11.91	10 6 53.51	− 1.05
	12	γ^1 Leonis	Sk.	38.2	40.9	46.8	49.0	51.2	53.4	55.6	1.7	4.4	12 51.24	− 0.56	+11.92	+11.91	10 13 2.59	− 0.03
	13	X, 5	Sk.	. .	. .	43.5	45.7	48.0	50.5	52.9	. .	. .	18 48.12	− 0.94	. .	+11.91	10 18 59.09	− 0.83
	14	X, 7	Sk.	. .	. .	42.4	44.7	47.0	49.4	51.7	. .	. .	24 47.04	− 0.88	. .	+11.91	10 24 58.07	− 0.87
	15	X, 10	Sk.	24.0	26.8	28.6	35.4	37.7	40.0	46.8	48.7	51.6	30 37.73	− 0.89	. .	+11.91	10 30 48.72	− 0.89
	16	l Leonis	Sk.	15.5	18.0	19.5	25.9	28.0	30.0	36.2	37.9	40.4	42 27.93	− 0.62	+11.80	+11.91	10 42 39.22	+ 0.02
	17	δ Leonis	Sk.	1.3	. .	. .	. .	. .	. .	. .	24.7	27.5	7 14.32	− 0.56	+12.01	+11.92	11 7 25.68	− 0.15
	18	XI, 3	Sk.	. .	. .	17.0	19.7	22.0	25.0	26.7	. .	. .	12 22.08	− 0.94	. .	+11.92	11 12 33.06	− 1.00
	19	τ Leonis	Sk.	. .	. .	13.4	15.3	17.4	19.6	21.6	. .	. .	21 17.46	− 0.68	+11.94	+11.92	11 21 28.70	− 0.04
	20	Jupiter I, S.	Sk.	34.4	37.0	38.5	. .	. .	. .	54.8	56.4	58.9	38 46.66	− 0.67	. .	+11.92	11 38 57.91	. .
	21	Jupiter II, N.	Sk.	. .	. .	45.4	47.4	49.6	51.6	53.7	. .	. .	38 49.54	− 0.67	. .	+11.92	11 39 0.79	. .
	22	o Virginis	Sk.	25.2	27.8	29.3	35.6	37.6	39.6	46.0	47.4	50.0	58 37.61	− 0.64	+11.91	+11.92	11 58 48.89	− 0.01
	23	Polaris, S. P.	Sk.	. .	. .	22.6	54.5	31.5	4.6	36.5	. .	. .	11 29.82	−15.19	. .	+11.93	1 11 26.59	− 0.43
20	24	α Leonis	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	25	32 Ursæ Majoris	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	26	Rumker 3155	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	27	Bessel's Zones 64	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	28	Lamont 923	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
21	29	Polaris	Sk.	. .	. .	43.0	7.0	35.6	0.0	26.0	. .	. .	11 34.20	−26.27	. .	+13.37	1 11 21.3	− 7.74
	30	Sun I, S.	Sk.	28.5	31.1	32.6	36.8	41.6	45.1	49.3	51.0	53.6	55 41.00	− 0.15	. .	+13.37	1 55 54.22	. .
	31	Sun II, N.	Sk.	39.2	41.6	43.3	49.5	51.6	53.6	0.0	1.6	4.0	57 51.60	− 0.15	. .	+13.37	1 58 4.78	. .
	32	a Tauri	Sk.	14.6	17.3	18.9	25.5	27.6	29.6	36.2	37.5	40.2	28 27.49	− 0.20	+13.35	+13.39	4 28 40.68	+ 0.02
	33	ι Aurigæ	Sk.	18.7	21.9	23.7	31.0	33.4	35.7	43.1	44.9	48.0	48 33.38	− 0.40	+13.42	+13.39	4 48 46.37	− 0.07
	34	κ Cancri	Sk.	30.0	32.6	34.1	40.5	42.5	44.6	50.8	52.4	54.9	0 42.49	+ 0.03	+13.34	+13.42	9 0 55.94	+ 0.07
	35	a Hydræ	Sk.	58.2	1.0	2.5	8.0	10.8	12.8	19.0	20.5	23.0	21 10.71	+ 0.19	+13.39	+13.42	9 21 24.32	0.00
	36	IX, 8	Sk.	57.7	2.0	4.0	12.4	15.2	17.4	25.6	27.6	31.0	41 14.77	+ 0.51	. .	+13.43	9 41 28.71	− 0.77
	37	IX, 10	Sk.	. .	. .	44.8	47.3	49.5	51.8	54.1	. .	. .	42 49.50	+ 0.35	. .	+13.43	9 43 3.28	− 0.06
	38	Weisse 5	Sk.	25.3	28.0	29.5	35.8	37.9	40.1	46.2	47.8	50.5	2 37.90	+ 0.04	. .	+13.43	10 2 51.37	− 0.04
	39	X, 4	Sk.	. .	. .	. .	. .	. .	30.2	35.4	37.2	40.6	14 24.84	+ 0.50	. .	+13.43	10 14 38.77	− 0.67
	40	X, 7	Sk.	. .	. .	39.5	42.0	44.2	46.3	48.7	. .	. .	24 44.14	+ 0.35	. .	+13.43	10 24 57.92	− 0.78
	41	X, 9	Sk.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	42	X, 10	Sk.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	43	XI, 4	Sk.	. .	. .	36.4	38.9	41.2	43.5	45.8	. .	. .	16 41.16	+ 0.37	. .	+13.44	11 16 54.97	− 1.02
	44	XI, 7	Sk.	. .	. .	48.6	51.4	54.0	56.5	59.3	. .	. .	27 53.96	+ 0.51	. .	+13.44	11 28 7.91	− 1.07
	45	XI, 12	Sk.	57.2	0.1	1.6	8.0	10.9	13.1	19.8	21.5	24.5	42 10.81	+ 0.35	. .	+13.44	11 42 24.60	− 1.13
	46	XI, 15	Sk.	24.2	26.8	28.6	35.3	37.5	39.8	46.8	48.5	51.3	48 37.64	+ 0.36	. .	+13.44	11 48 51.44	− 1.16
	47	o Virginis	Sk.	22.8	25.4	26.9	33.2	35.3	37.4	43.5	45.0	47.7	58 35.24	+ 0.05	+13.57	+13.44	11 58 48.73	− 0.15
	48	12 Canum Venat.	Sk.	41.0	44.4	46.5	54.3	56.9	59.4	7.3	9.2	12.6	49 56.84	− 0.26	+13.47	+13.45	12 50 10.03	− 0.02
	49	Polaris, S. P.	Sk.	. .	. .	39.5	11.5	49.0	23.0	56.0	. .	. .	10 47.80	+20.84	. .	+13.45	1 11 22.09	− 7.03

11. Wire B used.
25. Bisections at sets B and D.
38. Wire A used.
41. Bisections at wires V and VI.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	314 46	10 8.5	6.8	0.5	1.8	36	. .	355	. .	360	. .	76.0	15 10 27.6	. .	+ 15.9	66 17 4.7	− 1.7
2	352 34	8.5	7.5	1.0	3.4	38	. .	. .	. .	303	200	76.0	7 22 57.0	54.0	+ 7.6	58 29 25.8	− 1.3
3	297 8	9.0	5.6	28.4	3.6	36	. .	099	. .	069	. .	76.7	62 48 22.6	44.5	+ 1 55.7	113 56 39.5	− 0.7
4	337 46	8.8	5.4	27.8	2.0	29	. .	500	. .	482	. .	76.7	22 8 41.2	. .	+ 24.3	73 15 26.7	+ 3.8
5	340 22	6.5	3.0	26.5	0.5	37	. .	. .	. .	659	659	76.7	19 34 44.8	. .	+ 21.3	70 41 27.3	
6	327 56	10.8	6.8	0.2	4.6	35	. .	362	. .	280	. .	76.7	32 0 12.5	. .	+ 37.4	83 7 11.1	− 1.3
7	288 10	5.9	2.5	24.5	0.1	35	. .	. .	. .	265	239	76.7	71 46 6.6	. .	+ 3 0.7	122 55 28.5	−11.9
8	295 14	7.2	2.3	26.5	1.3	33	. .	050	. .	914	. .	76.7	64 41 32.7	. .	+ 2 6.6	115 50 0.5	−10.6
9	291 46	5.3	0.9	26.0	1.3	35	. .	. .	. .	864	900	76.7	68 10 16.4	. .	+ 2 29.2	119 19 6.8	−11.3
10	331 14	6.0	3.0	26.3	29.5	28	. .	963	. .	958	. .	76.7	28 40 30.8	40.3	+ 32.9	79 47 24.9	− 1.9
11	331 14	6.0	3.0	26.3	29.5	34	. .	970	. .	954	. .	76.7	28 44 36.1	. .	+ 33.0	79 51 30.3	− 2.1
12	341 32	4.5	1.4	24.5	28.4	37	165	028	. .	. .	. .	76.7	18 24 33.6	. .	+ 20.0	69 31 14.8	− 2.5
13	288 14	8.6	. .	28.6	. .	34	. .	160	. .	095	. .	76.7	71 41 52.2	. .	+ 3 0.1	122 51 13.5	−12.2
14	295 14	8.6	4.8	29.2	2.1	34	. .	. .	. .	646	646	76.7	64 42 0.3	. .	+ 2 6.7	115 50 28.2	−11.1
15	294 5	8 11.4 12 11 7	7.6 8.5	1.0 1.6	4.5 5.2	37	. .	538	. .	. .	. .	76.7	65 51 46.8	. .	+ 2 13.5	117 0 21.5	−11.4
16	332 16	10 9.5	6.0	29.1	2.5	36	. .	435	. .	389	. .	76.7	27 40 27.9	41.5	+ 31.5	78 47 20.6	− 0.8
17	342 16	14.5	11.5	4.5	6.9	36	218	209	. .	. .	. .	76.7	17 40 29.8	. .	+ 19.2	63 47 10.2	− 1.9
18	288 2	6.0	4.0	27.1	1.2	37	. .	. .	. .	270	280	76.7	71 54 38.9	. .	+ 3 2.1	123 4 2.2	−12.3
19	324 36	9.5	. .	0.5	. .	34	612	650	. .	. .	. .	76.7	35 20 1.2	. .	+ 42.6	86 27 5.0	− 1.4
21	325 0	3.7	2.1	25.1	0.4	34	825	. .	. .	. .	. .	76.7	34 55 59.2	. .	+ 42.0	86 3 2.4	
21	325 0	3.7	2.1	25.1	0.4	32	. .	. .	. .	063	960	76.7	34 55 16.9	. .	+ 42.0	86 2 20.1	
22	330 28	15.0	. .	7.5	. .	30	. .	. .	. .	880	. .	76.7	29 27 10.7	41.1	+ 33.9	80 34 5.8	− 2.3
23	52 22	4.9	1.5	26.5	28.5	31	720	750	710	710	718	76.7	307 33 12.0	40.6	− 1 18.0	358 38 15.2	− 0.5
24	333 38	11.6	9.5	1.9	3.7	35	. .	520	. .	550	. .	74.2	26 18 14.4	56.2	+ 28.1	77 25 3.7	− 0.3
25	26 46	19.6	17.9	10.1	10.5	32	918	. .	. .	. .	900	74.2	333 9 42.1	. .	− 28.8	24 15 34.5	− 0.8
26	332 22	16.2	13.7	6.6	7.5	30	. .	. .	. .	660	644	74.2	27 33 4.1	. .	+ 29.6	78 39 54.9	− 2.4
27	325 36	. .	17.1	. .	11.6	36	. .	130	. .	180	. .	74.2	34 20 31.2	57.1	+ 38.8	85 27 31.2	− 4.8
28	316 20	. .	1.7	. .	28.3	33	. .	. .	. .	110	130	74 2	43 35 30.7	. .	+ 54.0	94 42 45.9	− 7.6
29	49 40	5.0	5.3	13.0	13.0	36	360	350	330	340	. .	76.6	310 16 31.7	. .	− 1 7.4	1 21 45.5	− 1.0
30	332 46	11.5	12.0	5.0	2.3	38	018	095	. .	. .	. .	76.6	27 10 57.3	. .	+ 29.4	78 17 47.9	
31	333 18	13.0	13.7	5.7	4.8	38	. .	. .	. .	440	370	76.6	26 39 4.2	57.9	+ 28.7	77 45 54.1	− 2.4
32	337 18	20.9	22.9	13.6	13.5	33	. .	608	. .	590	. .	76.6	22 37 58.2	. .	+ 23.9	73 44 43.3	+ 2.6
33	354 0	7.0	8.5	28.5	29.7	32	. .	991	. .	971	. .	76.6	5 55 34.6	58.5	+ 5.9	57 2 1.7	+ 2.2
34	332 14	15.8	15.8	6.9	8.3	36	. .	790	. .	773	. .	76.4	27 42 40.7	50.3	+ 30.6	78 49 32.5	+ 0.5
35	332 56	15.5	15.1	5.6	8.3	32	. .	265	. .	232	. .	76.4	46 59 30.6	. .	+ 1 2.5	98 6 54.3	+ 0.3
36	291 2	14.0	11.9	4.4	5.1	38	200	300	. .	. .	. .	76.4	78 54 59.5	. .	+ 4 49.7	130 6 10.4	−13.9
37	295 14	14.4	12.9	3.8	7.0	32	. .	. .	. .	725	800	76.4	64 41 37.0	. .	+ 2 2.9	115 50 1.1	−11.1
38	331 14	16.5	14.9	7.1	8.4	38	. .	471	. .	421	. .	76.4	28 40 33.1	. .	+ 32.0	79 47 26.3	− 1.5
39	292 4	16.4	14.4	6.3	8.2	40	. .	. .	. .	510	580	76.4	77 53 37.8	. .	+ 4 26.4	129 4 25.4	−14.1
40	295 14	16.9	14.7	7.0	9.4	34	620	542	. .	. .	. .	76.4	64 42 6.6	. .	+ 2 3.3	115 50 31.1	−11.8
41	297 58	17.4	17.4	9.5	11.8	32	. .	. .	. .	990	990	76.4	71 57 45.0	. .	+ 2 57.9	123 7 4.1	−13.0
42	291 4	12.3	10.8	2.5	4.0	34	. .	. .	. .	045	002	76.4	65 51 54.5	. .	+ 2 10.0	117 0 25.7	−12.2
43	292 52	12.2	11.0	2.8	3.4	34	. .	100	. .	033	. .	76.4	67 3 54.8	48.0	+ 2 17.9	118 12 33.9	−12.8
44	280 40	10 3	10.4	1.1	2.6	35	. .	. .	. .	912	912	76.4	79 16 21.7	. .	+ 5 0.9	130 27 43.8	−14.3
45	295 2	11.4	10.7	1.5	3.5	37	258	180	. .	. .	. .	76.4	64 54 41.8	. .	+ 2 5.0	116 3 8.0	−12.6
47	294 2	11.3	10.5	1.5	3.7	33	. .	650	. .	550	. .	76.4	65 53 46.8	. .	+ 2 10.8	117 2 18.8	−12.8
47	330 28	20.5	18.0	10.1	12.2	30	. .	810	. .	840	. .	76.4	29 27 13.0	46.5	+ 33.3	80 34 7.5	− 0.1
48	0 2	11.1	11.0	4.0	2.7	33	. .	500	. .	490	. .	76.4	359 53 46.1	. .	− 0.1	51 0 7.2	+ 0.8
49	52 22	12.2	10.5	4.0	3.3	31	095	056	030	058	070	76.4	307 33 8.7	45.5	− 1 16.7	358 38 13.2	− 0.1

No.	Barom.	At. Ther.
	in.	°
2	30.47	59.0
3	30.41	46.0
19	30.40	44.0
16	30.40	43.0
22	30.38	43.0
23	30.36	42.0
24	29.66	58.0
31	29.93	58.0
33	29.97	58.5
34	30.04	53.5
38	30.08	50.5
1	30.11	49.0
49	30.12	48.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
5	− 0.2	. .	. .	− 0.2
20	− 1.1	− 21.2	. .	− 22.3
21	− 1.1	+ 21.2	. .	+ 20.1
30	− 3.9	− 15 56.9	. .	− 16 0.8
31	− 3.9	+ 15 56.9	. .	+ 15 53.0

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Apr. 22	1	Moon I, N. . .	E.	48.9	51.9	53.6	0.5	2.9	5.3	12.2	13.9	16.7	56 2.88	− 0.03	. .	+13.36	7 56 16.21	+71.13
	2	ε Hydræ . . .	E.	40.7	43.3	44.8	51.0	53.0	55.0	1.3	2.8	5.3	39 53 02	+ 0.18	+13.37	+13.36	8 40 6.56	− 0.07
	3	κ Cancri . . .	E.	29.9	32.4	34.0	40.3	42.3	44.4	50.7	52.2	54.8	0 42.33	+ 0.13	+13.37	+13.36	9 0 55.83	− 0.02
	4	ι Draconis . .	E.	. .	. .	23.8	38.5	53.0	7.4	22.6	. .	. .	18 53.66	− 3.96	. .	+13.36	9 19 2.46	− 0.25
	5	α Hydræ . . .	E.	58.6	0.8	2.3	8.5	10.6	12.6	18.9	20.5	23.0	21 10.58	+ 0.33	+13.36	+13.36	9 21 24.27	− 0.03
	6	α Leonis . . .	E.	14.5	17.0	18.7	24.9	27.0	29.1	35.4	36.9	39.6	1 27.01	+ 0.12	+13.43	+13.37	10 1 40.50	− 0.10
	7	γ¹ Leonis . . .	E.	36.6	38.7	40.3	46.8	49.0	51.3	57.8	59.5	2.1	12 49.06	+ 0.03	+13.41	+13.37	10 13 2.46	− 0.06
	8	Rumker 3155 .	E.	47.3	50.0	51.6	57.8	59.8	1.9	8.2	9.7	12.4	14 59.86	+ 0.14	. .	+13.37	10 15 13.37	− 1.01
	9	ρ Leonis . . .	E.	45.6	48.1	49.8	56.0	58.0	0.0	6.3	7.8	10.5	25 58.01	+ 0.15	+13.41	+13.37	10 26 11.53	− 0.11
	10	X, 9. . . .	E.	26.9	30.0	32.0	39.2	41.6	44.0	51.4	53.3	56.3	28 41.63	+ 0.61	. .	+13.37	10 28 55.61	− 0.76
	11	X, 10 . . .	E.	. .	. .	29.8	32.2	34.5	36.8	39.3	. .	. .	30 34.52	+ 0.55	. .	+13.37	10 30 48.42	− 0.70
	12	X, 13 . . .	E.	55.9	58.8	0.7	7.6	9.8	12.1	18.9	20.6	23.5	37 9.77	+ 0.52	. .	+13.37	10 37 23.66	− 0.82
	13	ι Leonis . . .	E.	13.6	15.7	17.3	23.6	25.5	27.7	34.0	35.5	38.1	42 25.60	+ 0.14	+13.37	+13.37	10 42 39.11	0.00
	14	δ Leonis . . .	E.	59.6	2.0	3.6	10.0	12.3	14.6	21.0	22.7	25.5	7 12.30	+ 0.03	+13.37	+13.38	11 7 25.71	− 0.05
	15	δ Crateris . .	E.	37.4	40.0	41.6	47.8	49.9	52.0	58.4	0.0	2.5	13 49.96	+ 0.39	+13.25	+13.38	11 14 3.73	+ 0.11
26	16	ε Leonis . . .	E.	15.4	18.3	20.1	24.5	26.8	29.1	31.4	. .	42.5	38 29.02	− 0.30	+13.93	+13.97	9 38 42.69	− 0.03
	17	IX, 7	E.	3.4	6.5	8.3	15.2	17.7	20.1	27.3	29.0	32.0	41 17.72	− 0.05	. .	+13.97	9 41 31.64	− 0.41
	18	IX, 9	E.	14.5	17.5	19.4	26.7	29.1	31.5	38.9	40.6	44.0	49 29.13	− 0.04	. .	+13.97	9 49 43.06	− 0.37
	19	α Leonis . . .	E.	14.1	16.8	18.3	24.6	26.7	28.7	35.1	36.6	39.3	1 26.69	− 0.24	+14.06	+13.97	10 1 40.42	− 0.13
	20	γ¹ Leonis . . .	E.	35.7	38.4	40.0	46.5	48.8	51.0	57.5	59.0	1.8	12 48.74	− 0.28	+13.90	+13.97	10 13 2.43	− 0.04
	21	Anonymous . .	E.	37.8	40.4	41.9	48.0	50.1	52.1	58.1	59.9	2.5	18 50.09	− 0.22	. .	+13.97	10 19 3.84	− 0.15
	22	Bessel's Zones 64.	E.	34.0	36.6	38.0	. .	. .	. .	. .	. .	. .	22 46.28	− 0.21	. .	+13.97	10 23 0.04	− 0.03
	23	X, 12	E.	50.8	53.5	55.1	2.0	4.1	6.5	13.3	14.6	17.6	36 4.17	− 0.08	. .	+13.98	10 36 18.07	− 0.78
	24	X, 14	E.	. .	. .	8.3	10.5	12.8	15.2	17.5	. .	. .	38 12.86	− 0.00	. .	+13.98	10 38 26.75	− 0.80
	25	δ Leonis . . .	E.	. .	. .	. .	. .	. .	. .	. .	22.3	25.0	7 11.88	− 0.28	+14.07	+13.98	11 7 25.58	− 0.15
	26	δ Crateris . .	E.	. .	. .	45.5	47.7	49.8	51.9	54.0	. .	. .	12 49.78	− 0.13	+13.92	+13.98	11 13 3.63	+ 0.04
	27	Moon I, N. . .	E.	. .	. .	3.9	6.0	8.1	10.2	12.3	. .	. .	16 8.10	− 0.22	. .	+13.98	11 16 21.86	+61.72
	28	XI, 6	E.	. .	. .	24.0	26.6	29.3	31.8	34.4	. .	. .	26 29.22	− 0.02	. .	+13.98	11 26 43.18	− 1.01
	29	XI, 7	E.	. .	. .	48.6	51.2	54.1	56.7	59.6	. .	. .	27 54.04	− 0.01	. .	+13.98	11 28 8.01	− 1.02
	30	XI, 9	E.	32.0	34.9	36.6	43.5	45.9	48.1	55.0	56.9	59.8	33 45.86	− 0.06	. .	+13.93	11 33 59.78	− 1.05
	31	XI, 11	E.	14.7	17.6	19.2	26.3	28.7	31.0	38.0	40.0	42.6	40 28.68	− 0.07	. .	+13.98	11 40 42.61	− 1.09
	32	β Leonis . . .	E.	12.8	15.5	17.0	23.5	25.6	27.7	34.0	35.7	38.4	42 25.58	− 0.25	+13.97	+13.98	11 42 39.31	− 0.01
	33	12 Canum Venat. .	E.	40.7	43.9	45.8	53.8	56.5	59.2	6.9	8.9	12.2	49 56.43	− 0.39	+14.06	+13.99	12 50 10.03	− 0.01
	34	θ Virginis . .	E.	1.0	3.6	5.0	11.3	13.4	15.4	21.5	23.0	25.8	3 13.33	− 0.17	+13.95	+13.99	13 3 27.15	0.00
	35	XIII, 4	E.	. .	. .	23.0	25.4	27.6	30.3	33.0	. .	. .	6 27.86	− 0.02	. .	+13.99	13 6 41.83	− 1.46
	36	Polaris, S. P. .	E.	. .	. .	58.6	32.0	6.0	40.0	14.0	. .	. .	11 6.00	+10.65	. .	+13.99	1 11 30.64	+ 0.20
	37	α Virginis . .	E.	8.6	11.3	12.8	19.0	21.0	23.0	29.4	31.0	33.6	18 21.08	− 0.14	+13.95	+13.99	13 18 34.93	+ 0.02
	38	α Andromedæ . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. . .		. .
	39	γ Pegasi . . .	F.	. .	. .	26.0	28.1	30.2	32.2	34.4	. .	. .	6 30.18	− 0.40	+14.36	+14.17	0 6 43.95	− 0.13
	40	Polaris	F.	. .	. .	. .	57.0	23.5	48.0	16.0	. .	. .	11 22.98	− 7.55	. .	+14.18	1 11 29.61	− 0.91
27	41	η Tauri	F.	. .	. .	. .	. .	47.2	49.5	53.8	55.6	58.3	39 44.96	− 0.42	+14.14	+14.18	3 39 58.72	+ 0.04
	42	β Orionis. . .	F.	2.2	4.6	6.4	12.5	14.5	16.5	22.7	24.3	26.8	8 14.50	− 0.30	+14.11	+14.19	5 8 28.33	+ 0.05
	43	ε Leonis . . .	E.	15.3	18.3	19.9	26.6	28.8	31.0	37.8	39.5	42.3	38 28.83	− 0.30	+14.26	+14.12	9 38 42.56	− 0.14
	44	μ Leonis . . .	E.	9.6	12.0	13.7	20.6	22.9	25.1	32.0	33.7	36.7	45 22.86	− 0.40	+14.12	+14.12	9 45 36.58	− 0.01
	45	79 Draconis, S. P. .	E.	42.6	33.7	28.7	7.5	0.7	53.7	32.5	27.4	18.4	51 0.58	+ 0.17	. .	+14.12	21 51 14.87	− 0.54
	46	α Leonis . . .	E.	14.2	16.8	18.4	24.7	26.8	28.9	35.2	36.8	39.4	1 26.80	− 0.37	+14.07	+14.12	10 1 40.55	+ 0.01
	47	γ¹ Leonis . . .	E.	35.6	38.4	40.0	46.6	48.7	50.9	57.5	59.0	1.8	12 48.72	− 0.35	+14.10	+14.12	10 13 2.36	− 0.10
	48	9 Draconis . .	E.	19.9	31.1	37.3	2.8	11.6	20.6	46.1	52.7	4.2	24 11.81	− 0.90	. .	+14.12	10 24 25.03	+ 0.44
	49	ρ Leonis . . .	E.	45.2	47.9	49.5	55.6	57.7	59.8	6.0	7.6	10.2	25 57.72	− 0.36	+14.15	+14.12	10 26 11.48	− 0.10
	50	ℓ Leonis . . .	E.	12.8	15.5	17.0	23.2	25.3	27.4	33.5	35.2	37.9	42 25.31	− 0.36	+14.11	+14.12	10 42 39.07	+ 0.01
	51	α Hydræ . . .	E.	58.0	0.6	2.2	8.3	10.4	12.4	18.5	20.2	22.8	21 10.38	− 0.27	+14.07	+14.07	9 21 24.18	− 0.03

4. Bisections at wires II and III.
29. Bisections at wires V and VI.
34. Telescope micrometer reading increased two revolutions in reduction.
45, 48. Bisections at sets B and D.

Number.	Circle Division	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	347 8	10 18.3	17.5	10.5	12.5	33	755	840	920	000	065	76.0	12 47 59.5	55.5	+ 13 1	63 54 33.8	
2	377 56	15.0	15.1	7.3	8.2	35	. .	215	. .	135	. .	76.0	32 0 15.3	. .	+ 36.1	83 7 12.6	+ 0.5
3	332 14	5.3	5.8	29.2	29.5	37	. .	420	. .	320	. .	76.0	27 42 40.0	. .	+ 30.4	78 49 31.6	+ 0.3
4	42 54	14.5	11.7	4.5	4.5	31	820	930	. .	. .	. .	76.0	317 1 23.5	. .	− 53.9	8 6 50.8	+ 1.1
5	312 56	13.5	11.8	4.4	6.2	32	. .	470	. .	455	. .	76.0	46 59 31.3	. .	+ 1 2.0	98 6 54.5	+ 0.5
6	333 38	13.2	10.8	4.5	5.4	35	. .	315	. .	290	. .	76.0	26 18 14.4	. .	+ 28.7	77 25 4.3	+ 0.4
7	341 32	7.2	6.1	29.5	0.0	37	. .	105	. .	060	. .	76.0	18 24 36.4	. .	+ 19.3	69 31 16.9	+ 0.4
8	332 24	9.0	7.7	1.0	2.0	38	. .	895	. .	860	. .	76.0	27 33 5.6	. .	+ 30.3	78 39 57.1	− 1.6
9	331 0	8.5	8.2	0.8	2.6	34	. .	190	. .	050	. .	76.0	28 55 52.8	. .	+ 32.1	80 2 46.1	− 0.6
10	287 58	17.3	15.6	9.6	10.4	33	230	170	. .	. .	. .	76.0	71 57 46.2	. .	+ 2 56.4	123 7 3.8	−13.3
11	294 4	6.2	5.3	28.3	28.8	34	. .	. .	. .	520	480	76.0	65 51 55.8	. .	+ 2 8.9	117 0 25.9	−12.2
12	294 26	13.2	12.5	5.3	6.7	34	. .	515	. .	460	. .	76.0	65 30 2.6	. .	+ 2 6.8	116 38 30.6	−12.2
13	332 16	14.4	13.1	6.0	6.3	36	. .	175	. .	130	. .	76.0	27 40 28.8	. .	+ 30.5	78 47 20.5	− 0.5
14	342 16	13.6	12.8	4.3	5.9	36	. .	310	. .	265	. .	76.0	17 40 30.2	. .	+ 18.5	68 47 9.9	− 1.2
15	306 58	13.8	13.0	5.7	6.5	35	. .	620	. .	560	. .	76.0	52 58 19.9	50.0	+ 1 17.0	104 5 58.1	− 0.4
16	345 24	7.5	5.3	29.0	0.8	35	. .	045	. .	015	. .	77.1	14 32 6.1	. .	+ 15.1	65 38 42.4	− 0.6
17	299 40	12.7	11.5	4.7	6.7	29	. .	. .	. .	235	200	77.1	69 14 42.8	49.0	+ 2 32.5	120 23 36.5	−12.4
18	288 0	10.7	9.0	2.2	2.7	36	. .	895	. .	855	. .	77.1	71 56 37.0	. .	+ 2 56.8	123 5 55.0	−13.1
19	333 38	15.0	13.4	6.3	7.5	35	. .	010	. .	970	. .	77.1	26 18 12.8	. .	+ 28.8	77 25 2.8	− 0.8
20	341 32	6.8	5.7	29.0	29.8	37	. .	030	. .	000	. .	77.1	18 24 36.2	. .	+ 19.4	69 31 16.8	+ 0.6
21	329 10	8.8	7.7	1.2	2.1	36	. .	200	. .	160	. .	77.1	30 46 25.4	. .	+ 34.8	81 53 21.4	− 2.6
22	325 36	10.3	8.3	1.8	2.1	36	. .	585	. .	460	. .	77.1	34 20 31.3	. .	+ 40.2	85 27 32.7	− 3.8
23	296 46	10.7	8.7	2.5	3.4	33	. .	525	. .	485	. .	77.1	63 9 45.6	. .	+ 1 55.1	114 18 1.9	−12.0
24	297 44	8.8	7.1	0 5	1.8	32	. .	. .	. .	520	500	77.1	62 11 28.9	. .	+ 1 50.5	113 19 40.6	−11.8
25	342 16	14.4	12.9	5.4	6.5	36	. .	. .	. .	190	165	77.1	17 40 30.8	. .	+ 18.7	68 47 10.7	0.0
26	306 58	14.2	13.0	5.1	7.5	35	. .	465	. .	405	. .	77.1	52 58 18.9	. .	+ 1 17.6	104 5 57.7	− 0.9
27	329 46	7.5	7.0	0.2	0.3	34	915	020	165	335	560	77.1	30 10 9.2	. .	+ 34.1	81 17 4.5	
28	285 36	12.5	12.8	4.5	7.0	38	. .	840	. .	780	. .	77.1	74 21 9.7	. .	− 3 26.6	125 30 57.5	−14.5
29	280 40	9.7	8 1	0.2	1.5	35	. .	. .	. .	995	980	77.1	79 16 22.1	. .	+ 5 0.6	130 27 44.2	−15.1
30	293 18	14.8	13.2	5.2	7.5	39	. .	940	. .	880	. .	77.1	66 39 27.6	. .	+ 2 15.3	117 48 4.1	−13.4
31	291 16	15.8	13.7	7.0	7.3	31	. .	965	. .	950	. .	77.1	68 39 26.5	. .	+ 2 29.3	119 48 17.0	−13.7
32	336 20	11.5	10.5	3.3	4.5	37	. .	080	. .	030	. .	77.1	23 36 41.4	. .	+ 25.7	74 43 28.3	− 0.1
33	0 2	13.0	12.0	5.7	5.2	33	. .	260	. .	220	. .	77.1	359 53 44.6	. .	− 0.1	51 0 5.7	+ 0.4
34	316 12	9.7	8.0	1.0	3.3	35	. .	745	. .	700	. .	77.1	43 41 49.5	44.0	+ 56.4	94 52 7.1	0.0
35	285 50	11.3	9.1	1.0	3.7	38	350	220	. .	. .	. .	77.1	74 6 58.2	. .	+ 3 24.6	125 16 44.0	−13.7
36	52 22	9.5	7.9	2.0	1.3	31	. .	000	. .	985	. .	77 1	307 33 6.1	. .	− 1 16.7	358 38 10.6	− 1.8
37	310 34	11.2	9.1	1.3	4.3	37	. .	860	. .	840	. .	77.1	49 22 52.4	. .	+ 1 8.8	100 30 22.4	+ 0.6
38	349 26	8.2	7.7	29.2	1.1	34	. .	244	. .	231	. .	75.9	10 29 53.7	49.8	+ 10.9	61 36 25.8	+ 0.2
39	335 32	11.3	9.1	1.0	3.7	35	. .	856	. .	862	. .	75.9	24 24 20.6	. .	+ 26.6	75 31 8.4	+ 0.9
40	49 40	3.2	5.7	29.9	26.1	37	. .	312	326	330	. .	75.9	310 16 38.0	54.0	− 1 8.6	1 21 50.6	+ 2.5
41																	
42	312 42	2.3	1.1	24.1	29.9	33	. .	120	. .	108	. .	75.9	47 13 31.6	57.4	+ 1 2.3	98 20 55.1	− 1.2
43	345 24	10.4	9.3	2.5	3.7	34	. .	900	. .	865	. .	75.9	14 32 6.0	. .	+ 15.1	65 38 42.3	− 0.6
44	347 38	13.3	11.5	3.6	4.3	31	. .	925	. .	865	. .	75.9	12 17 22.0	53.0	+ 12.7	63 23 55.9	− 1.2
45	67 52	9.5	8.9	2.0	2.2	26	820	. .	. .	. .	780	75.9	292 2 1.0	. .	− 2 22.8	343 5 59.4	− 1.0
46	333 38	16.5	15.0	7.7	9.3	34	. .	965	. .	950	. .	75.9	26 18 12.7	. .	+ 28.8	77 25 2.7	− 0.9
47	341 32	7.0	6.0	29.0	0.0	37	. .	015	. .	995	. .	75.9	18 24 35.0	. .	+ 19.4	69 31 15.6	− 0.5
48	37 24	12.7	9 9	3.6	4.0	36	090	. .	. .	. .	060	75.9	322 32 25.5	. .	− 44.8	13 38 1.9	− 3.2
49	331 0	8.2	6.0	28.3	1.5	34	. .	. .	. .	040	020	75.9	28 55 50.2	. .	+ 32.3	80 2 43.7	− 2.8
50	332 16	12.5	11.8	3.5	5.5	36	. .	200	. .	190	. .	75.9	27 40 27.6	49.0	+ 30.7	78 47 19.5	− 1.1
51	312 56	13.3	11.2	2.5	6.2	32	. .	190	. .	170	. .	77.5	46 59 27.8	. .	+ 1 3.4	98 6 52.4	− 1.4

No.	Barom.	At. Ther.
	in.	°
1	30.00	55.0
15	29.97	50.5
17	29.92	49.0
34	30.01	46.0
38	30.18	46.5
40	30.18	50.0
42	30.13	57.0
44	31.11	55.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
1	−12 16.3	+ 15 21.6	. .	+ 3 5.3
27	−27 2.3	+ 14 47.3	. .	− 12 15.0

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s	s.
Apr. 29	1	ε Leonis	E.	15.4	18.1	19.8	26.5	28.8	31.0	37.8	39.5	42.1	38 28.78	− 0.36	+14.19	+14.07	9 38 42.49	− 0.18
	2	IX, 8	Sk.	58.6	1.9	3.9	12.0	14.7	17.2	25.3	27.5	30.7	41 14.64	− 0.16	. .	+14.28	9 41 28.76	− 0.31
	3	μ Leonis	E.	9.0	11.9	13.5	20.6	22.8	25.0	32.0	33.8	36.6	45 22.80	− 0.37	+14.12	+14.07	9 45 36.50	− 0.06
	4	IX, 9	Sk.	14.5	17.5	19.3	26.0	29.1	31.6	38.9	40.8	43.8	49 29.12	− 0.19	. .	+14.28	9 49 43.21	− 0.42
	5	79 Draconis, S. P.	E.	43.3	34.2	29.4	15.5	8..	1.2	54.2	47.3	. .	51 1.23	+ 0.17	. .	+14.07	21 51 15.47	+ 0.10
	6	a Leonis	Sk.	14.0	16.6	18.2	24.5	26.5	28.6	31.9	36.5	39.0	1 26.53	− 0.32	+14.26	+14.28	10 1 40.46	− 0.02
	7	γ¹ Leonis	Ha.	35.3	38.1	39.7	46.3	48.4	50.6	57.0	58.7	1.5	12 48.40	− 0.35	+14.35	+14.28	10 13 2.33	− 0.10
	8	Anonymous	Sk	37.5	40.0	41.6	47.7	49.0	51.8	58.0	59.6	2.3	18 49.82	− 0.21	. .	+14.28	10 19 3.79	− 0.92
	9	9 Draconis	E.	. .	53.0	2.0	10.6	19.2	28.0	45.5	51.9	2.8	24 10.65	− 0.89	. .	+14.07	10 24 23.83	− 0.62
	10	ρ Leonis	E.	. .	. .	55.6	57.6	59.8	1.8	6.0	7.7	10.0	25 57.67	− 0.32	+14.14	+14.07	10 26 11.42	− 0.14
	11	Lamont 923	Sk	. .	. .	. .	. .	. .	. .	59.3	0.9	3.5	23 51.15	− 0.28	. .	+14.28	10 29 5.15	− 0.85
	12	l Leonis	Sk.	12.7	15.4	16.9	23.1	25.2	27.3	33.6	35.2	37.7	42 25.23	− 0.32	+14.13	+14.28	10 42 39.16	+ 0.15
	13	δ Crateris	Ha	36.8	39.5	41.1	47.4	49.5	51.6	57.9	59.6	2.1	12 49.50	− 0.25	+14.29	+14.28	11 13 3.53	− 0.03
	14	τ Leonis	E.	2.7	5.2	6.7	12.9	15.0	17.0	23.1	24.7	27.2	21 14.94	− 0.30	+13.98	+14.08	11 21 28.72	+ 0.08
	15	υ Leonis	Ha	4.8	7.5	8.9	15.0	17.0	19.1	25.3	26.7	29.3	30 17.07	− 0.29	+14.26	+14.28	11 30 31.06	− 0.02
	16	Jupiter I, S.	Sk.	53.0	55.7	57.2	. .	. .	. .	13.6	15.0	17.7	31 5.37	− 0.30	. .	+14.29	11 34 19.36	. .
	17	Jupiter II, N.	Sk.	. .	. .	4.0	6.1	8.1	10.2	12.2	. .	. .	34 8.12	− 0.30	. .	+14.29	11 34 22.11	. .
	18	β Leonis	E.	12.9	15.6	17.3	23.5	25.6	27.7	34.0	35.7	38.4	42 25.63	− 0.33	+13.92	+14.08	11 42 39.38	+ 0.08
	19	o Virginis	Ha	22.4	25.0	26.6	32.7	34.8	36.8	43.0	44.6	47.2	58 31.79	− 0 32	+14.35	+14.29	11 58 48.76	− 0.08
	20	η Virginis	Ha.	2.7	5.2	6.8	12.9	14.9	17.0	23.0	24.6	27.2	13 14.92	− 0.29	+14.31	+14.29	12 13 28.92	− 0.04
	21	β Corvi	Ha	20.3	23.0	24.7	31.3	33.5	35.7	42 4	44.0	46.6	27 33.50	− 0.23	+14.26	+14.29	12 27 47.56	− 0.01
	22	12 Canum Venat.	Sk.	40.2	43.7	45.5	53.4	56.0	58.6	6.5	8.3	11.6	49 55.98	− 0.41	+14.45	+14.29	12 50 9.86	− 0.16
	23	θ Virginis	Sk.	0.9	3.5	5.0	11.0	13.2	15.2	21.3	22.9	25.3	3 13.14	− 0.28	+14.25	+14.29	13 3 27.15	0.00
	24	Polaris, S P.	Sk.	. .	. .	25.0	40.0	42.5	46.0	. .	. .	. .	11 12.28	+ 5.57	. .	+14.30	1 11 32.15	+ 0.68
	25	Moon I, N.	Sk.	53.0	55.6	57.3	3.6	5.7	7.8	14.1	15.7	18.2	26 5.67	− 0.27	. .	+14.30	13 26 19.70	+61.53
	26	η Bootis	Sk.	16.0	18.6	20.3	26.7	28.9	31.0	37.6	39.2	41.8	48 28.90	− 0.31	+14.35	+14.30	13 48 42.86	− 0.10
	27	Mercury II, N.	E.	58.0	0.5	2.0	8.3	10.3	12.4	18.6	20.0	22.7	7 10.31	− 0.54	. .	+14.26	1 7 24.06	. .
	28	Polaris	E.	. .	. .	. .	53.0	18.0	43.0	9.0	. .	. .	11 17.68	− 1.54	. .	+14.26	1 11 30.40	− 1.30
30	29	Sun I, N.	E.	23.2	25.8	27.4	33.8	36.0	38.1	44.3	46.0	48.7	29 35.92	− 0.50	. .	+14.27	2 29 49.69	. .
	30	Sun II, S	E.	35.2	37.8	39.4	45.6	47.8	50.0	56.4	58.0	0.7	31 47.88	− 0.50	. .	+14.27	2 32 1.65	. .
	31	Venus, S.	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	32	Venus, N.	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	33	ζ Persei	E.	. .	. .	53.0	55.5	57.9	0.3	2.7	. .	. .	45 57.88	− 0.50	+14.27	. .		. .
May 3	34	μ Leonis	E.	9.6	12.4	14.0	20.9	23.2	25.5	32.4	34.0	36.9	45 23.21	− 0.59	+13.88	+13.87	9 45 36.49	− 0.02
	35	a Leonis	E.	14.5	17.2	18.8	25.0	27.1	29.1	35.5	37.0	39.7	1 27.10	− 0.58	+13.90	+13.87	10 1 40.39	− 0.07
	36	γ¹ Leonis	E.	36.0	38.7	40.3	46 8	49.1	51.3	57.8	59.5	2.3	12 49.09	− 0.58	+13.85	+13.87	10 13 2.38	0.00
	37	9 Draconis	E.	18.9	29.8	36.5	1.9	10.9	19.4	45.7	52.2	3.6	24 10.99	− 0.71	. .	+13.87	10 24 24.15	− 0.01
	38	ρ Leonis	E.	45.6	48.2	49.9	56.0	58.1	0.2	6.3	8.0	10.6	25 58.10	− 0.58	+13 93	+13.87	10 26 11.39	− 0.13
	39	226 Cephei, S. P.	E.	24.6	18.4	2.4	54.1	45.6	37.4	29.7	13.0	7.2	30 45.82	− 0.38	. .	+13.87	22 30 59.31	− 0.34
	40	Anonymous	E.	16.8	19.4	20.9	27.0	29.0	31.0	37.3	38.7	41.2	35 29.03	− 0.58	. .	+13.87	10 35 42.32	− 0.70
	41	l Leonis	E.	13.2	15.8	17.3	23.6	25.7	27.8	34.0	35.6	38.2	42 25.69	− 0.58	+13.89	+13.87	10 42 38.98	+ 0.02
	42	δ Leonis	E.	59.0	1.8	3.6	10.0	12.2	14.5	21.1	22.7	25.4	7 12.26	− 0.58	+13.92	+13.87	11 7 25.55	− 0.11
	43	δ Crateris	E.	40.1	41.8	46.0	48.1	50.2	52.3	54.4	58.6	0.2	12 50.19	− 0.58	+13.89	+13.87	11 13 3.48	− 0.04
	44	τ Leonis	E.	3.0	5.6	7.1	13.3	15.3	17.4	23.4	25.0	27.7	21 15.31	− 0.58	+13.86	+13.87	11 21 28.60	− 0.01
	45	υ Leonis	E.	. .	. .	. .	17.8	19.9	21.9	25.9	27.5	30.0	30 17.79	− 0.58	+13.80	+13.87	11 31 31.08	+ 0.03
	46	β Leonis	E.	13.3	16.0	17.5	23.9	26.0	28.1	34.5	36.0	38.8	42 26.01	− 0.58	+13.82	+13.87	11 42 37.30	+ 0.03
	47	Moon II	Sk.	34.2	37.2	38.8	45.9	48.2	50.5	57.6	59.4	2.0	45 48.20	− 0.54	. .	+14.06	16 46 1.72	−69.71
	48	κ Ophiuchi	Sk.	17.9	20.6	22.0	28.2	30.3	32.4	38.5	40.0	42.6	51 30.28	− 0.52	+14.07	+14.06	16 51 43.82	+ 0.03
	49	ε Ursæ Minoris	Sk.	. .	. .	22.0	37.0	52.0	7.3	23.0	. .	. .	58 52.26	− 0.41	. .	+14.06	16 59 5.91	− 0.04

5, 43. Bisections at set C.
5. Wire A used.
18. Telescope micrometer reading increased five revolutions in reduction.
25. Bisections at sets B and D.
27. Telescope micrometer reading reduced for thirty-eight revolutions.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	345 24	10 8.0	4.5	28.8	0.8	34	. .	995	. .	950	. .	77.5	14 32 5.5	. .	+ 15.4	65 38 42.1	— 0.7
2	281 2	9.0	7.5	1.4	1.6	38	. .	068	. .	932	. .	77.5	78 51 53.3	. .	+ 4 54.1	130 6 8.6	—14.5
3	347 38	13.0	11.8	2.5	4.0	31	. .	. .	. .	840	825	77.5	12 17 22.7	. .	+ 12.9	63 23 56.8	— 0.2
4	288 0	9.8	7.7	0.5	2.5	36	. .	690	. .	670	. .	77.5	71 56 33.4	40.5	+ 3 0.0	123 5 54.6	—15.3
5	67 52	13.3	10.0	2.5	4.1	36	830	. .	. .	. .	820	77.5	292 2 5.0	. .	— 2 25.6	343 6 0.6	+ 0.3
6	333 38	8.8	7.5	0.3	2.5	35	. .	258	. .	258	. .	77.5	26 18 11.6	. .	+ 29.4	77 25 2.2	— 1.3
7	341 32	5.0	3.5	26.3	27.3	37	. .	100	. .	060	. .	77.5	18 24 35.3	. .	+ 19.8	69 31 16.3	+ 0.3
8	329 10	7.5	6.7	28.8	0.7	36	. .	185	. .	250	. .	77.5	30 46 24.9	. .	+ 35.4	81 53 21.5	— 2.4
9	37 21	14.3	9.0	3.5	4.3	36	. .	100	. .	015	. .	77.5	322 32 28.1	. .	— 45.5	13 38 3.8	— 1.0
10	331 0	11.5	9.3	1.6	4.0	33	. .	755	. .	735	. .	77.5	28 55 50.2	. .	+ 33.6	80 2 45.0	— 1.4
11	316 20	5.0	3.5	25.2	29.0	32	. .	. .	. .	655	635	77.5	43 35 27.7	. .	+ 56.6	94 42 45.5	— 6.8
12	332 16	12.5	8.9	1.5	3.7	36	. .	. .	. .	090	090	77.5	27 40 26.5	. .	+ 31.2	78 47 18.9	— 1.6
13	306 58	11.4	10.0	2.5	4.0	35	. .	560	. .	475	. .	77.5	52 58 17.6	38.8	+ 1 18.9	104 5 57.7	— 1.0
14	324 36	14.7	11.3	5.3	6.9	34	. .	280	. .	205	. .	77.5	35 20 0.7	. .	+ 42.3	86 27 4.2	— 1.6
15	320 56	14.2	12.5	3.8	6.0	36	. .	750	. .	700	. .	77.5	39 0 38.3	. .	+ 48.4	90 7 47.9	— 0.6
16	325 28	12.9	10.9	3.2	4.5	38	. .	. .	. .	060	. .	77.5	34 28 57.8	. .	+ 41.0	85 36 0.0	
17	325 28	12.9	10.9	3.2	4.5	35	. .	. .	. .	. .	305	77.5	34 28 15.8	. .	+ 41.0	85 35 18.0	
18	336 20	9.9	7.5	29.5	2.1	32	. .	115	. .	105	. .	77.5	23 36 39.9	. .	+ 26.1	74 43 27.2	— 1.1
19	330 28	9 23.8	22.0	15.2	18.4	32	. .	250	. .	245	. .	77.5	29 27 10.0	. .	+ 33.8	80 34 5.0	— 2.1
20	321 6	10 12.3	11.4	2.7	5.0	37	. .	990	. .	955	. .	77.5	38 50 56.1	. .	+ 48.2	89 58 5.5	— 1.7
21	238 22	7.9	6.1	28.6	1.5	34	. .	530	. .	490	. .	77.5	61 33 58.6	. .	+ 1 50.1	112 42 9.9	— 0.4
22	0 2	6.0	3.1	26.3	27.0	33	. .	718	. .	650	. .	77.5	359 53 43.5	. .	— 0.1	51 0 4.6	— 0.1
23	316 12	5.7	2.4	24.5	29.3	37	970	970	. .	. .	. .	77.5	43 44 48.3	. .	+ 57.3	94 52 6.8	— 0.3
24	52 22	0.7	27.0	21.3	22.4	31	640	610	630	. .	. .	77.5	307 33 6.3	. .	— 1 18.0	358 38 9.5	— 0.6
25	312 42	0.9	27.5	19.8	23.1	30	843	. .	800	. .	531	77.5	47 12 52.6	. .	+ 1 4.7	98 20 18.5	
26	340 4	8.5	5.9	27.4	0.4	33	037	141	. .	. .	. .	77.5	19 51 36.3	35.5	+ 21.7	70 58 19.2	— 0.8
27	325 18	2.2	1.8	24.0	28.5	32	100	080	. .	040	980	77.5	34 38 48.8	. .	+ 39.9	85 45 49.9	
28	49 40	2.5	1.8	24.8	25.9	37	. .	345	. .	250	. .	77.5	310 16 36.8	. .	— 1 8.1	1 21 49.9	+ 0.9
29	336 12	2.2	1.8	24.0	28.5	39	030	995	. .	. .	. .	77.5	23 45 2.7	. .	+ 25.2	74 51 49.1	
30	335 40	1.7	29.7	22.1	26.7	38	. .	. .	. .	335	260	77.5	24 16 51.7	. .	+ 25.9	75 23 38.8	
31	340 40	8.8	7.4	29.2	2.3	38	. .	. .	. .	. .	000	77.5	19 16 54.1	. .	+ 20.0	70 23 35.3	
32	340 40	8.8	7.4	29.2	2.3	37	. .	. .	. .	380	. .	77.5	19 16 44.5	. .	+ 20.0	70 23 25.7	
33	352 34	10.4	10.2	4.0	6.3	38	175	. .	. .	. .	150	77.5	7 22 59.3	. .	+ 7.4	58 29 27.9	— 0.6
34	347 38	18.4	15.3	6.5	7.8	31	. .	680	. .	630	. .	76.9	12 17 23.2	. .	+ 12.7	63 23 57.1	+ 0.4
35	333 38	15.3	14.5	6.1	7.7	31	. .	930	. .	920	. .	76.9	26 18 11.8	51.0	+ 28.9	77 25 1.9	— 1.3
36	341 32	13.7	11.5	3.8	6 2	36	. .	680	. .	630	. .	76.9	18 24 36.4	. .	+ 19.5	69 31 17.1	+ 1.4
37	37 24	9.8	7.3	0.1	1.5	36	115	140	. .	. .	. .	76.9	322 32 25.9	. .	— 44.9	13 38 2.2	— 2.2
38	331 0	6.5	4.5	26.5	0.3	34	. .	165	. .	100	. .	76.9	28 55 50.8	. .	+ 32.4	80 2 44.4	— 1.7
39	65 26	15.7	13.3	5.0	7.2	34	520	. .	. .	. .	495	76.9	294 30 4.8	. .	— 2 7.9	345 34 18.1	+ 0.6
40	320 10	12.5	9.3	1.5	5.0	35	. .	885	. .	870	. .	76.9	39 46 22.6	. .	+ 48.8	90 53 32.6	— 8.3
41	332 16	15.6	13.5	5.7	8.5	35	. .	955	. .	945	. .	76.9	27 40 27.5	. .	+ 30.8	78 47 19.5	— 1.7
42	342 16	15.3	13.5	5.2	8.0	36	. .	125	. .	085	. .	76.9	17 40 29.6	. .	+ 18.8	68 47 9.6	— 0.4
43	306 58	17.6	15.6	7.2	10.5	35	. .	235	. .	200	. .	76.9	52 58 18.1	47.5	+ 1 17.9	104 5 57.2	— 1.6
44	324 36	16.2	12.2	5.3	8.3	34	. .	270	. .	205	. .	76.9	35 20 0.2	. .	+ 41.8	86 27 3.2	— 2.5
45	320 56	15.7	13.5	5.3	7.5	36	. .	. .	. .	645	615	76.9	39 0 37.9	. .	+ 47.9	90 7 47.0	— 1.4
46	336 20	12.9	10.4	2.7	5.0	36	. .	975	. .	935	. .	76.9	23 36 39.9	45.0	+ 25.9	74 43 27.0	— 0.7
47																	
48																	
49																	

No.	Barom.	At. Ther.
	in.	°
4	29.95	41.0
13	29.99	39.5
18	30.00	39.0
20	30.01	38.0
35	30.16	54.0
45	30.17	51.5

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
16	— 1.1	— 21.0	. .	— 22.1
17	— 1.1	+ 21.0	. .	+ 19.9
25	—39 32.6	+ 14 46.9	. .	— 24 45.7
27	— 4.6	+ 5.3	. .	+ 0.7
29	— 3.5	+ 15 54.8	. .	+ 15 51.3
30	— 3.6	— 15 54.8	. .	— 15 58.4
31	— 1.8	— 4.8	. .	— 6.6
32	— 1.8	+ 4.8	0.0	+ 3.0

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
May 3	1	α^1 Herculis . . .	Sk.	29.3	32.0	33.7	40.0	42.2	44.3	50.6	52.3	54.9	8 42.14	− 0.51	+14.06	+14.06	17 8 55.60	+ 0.02
	2	44 Ophiuchi . . .	Sk.	15.2	18.0	19.6	26.4	28.7	30.9	37.5	39.2	42.2	18 28.63	− 0.54	+14.11	+14.06	17 18 42.15	− 0.02
	3	α Ophiuchi . . .	Sk.	40.5	43.2	44.8	50.9	53.1	55.2	1.4	3.0	5.7	28 53.09	− 0.51	+14.02	+14.06	17 29 6.64	+ 0.07
5	4	δ Leonis . . .	Ha.	58.9	1.0	3.2	9.7	12.0	14.2	20.6	22.3	25.0	7 11.91	− 0.52	+14.16	+14.04	11 7 25.40	− 0.18
	5	δ Crateris . . .	Ha.	37.3	40.0	41.5	47.9	50.0	52.0	58.3	59.9	2.7	12 49.96	− 0.49	+14.01	+14.04	11 13 3.51	+ 0.01
	6	τ Leonis . . .	Ha.	2.8	5.3	7.0	12.9	15.0	17.1	23.2	24.8	27.4	21 15.06	− 0.50	+14.01	+14.04	11 21 28.60	+ 0.01
	7	λ Draconis . . .	Ha.	8.0	16.0	20.4	38.3	44.6	50.8	8.4	12.9	20.3	23 44.48	− 0.72	. .	+14.04	11 23 57.80	− 0.03
	8	ϵ Leonis . . .	Ha.	5.1	7.8	9.3	15.4	17.6	19.5	25.6	27.1	29.8	30 17.47	− 0.50	+14.02	+14.04	11 30 31.01	− 0.02
	9	γ Cephei, S. P. .	Ha.	. .	. .	11.0	1.6	52.5	43.8	34.4	. .	. .	33 52.66	− 0.06	. .	+14.04	23 34 6.6.	− 0.45
	10	β Leonis . . .	Ha.	13.0	15.6	17.3	23.6	25.7	27.8	34.2	35.7	38.4	42 25.70	− 0.52	+14.05	+14.04	11 42 39.22	− 0.02
	11	α Virginis . . .	Ha.	22.9	25.5	27.0	33.2	35.3	37.4	43.6	45.0	47.7	58 35.29	− 0.51	+14.01	+14.05	11 58 48.83	+ 0.02
	12	Moon II, N. . .	F.	. .	. .	18.6	20.9	23.3	25.7	28.0	. .	. .	43 23.30	− 0.40	. .	+13.73	18 43 36.63	−72.68
	13	ζ Aquilæ . . .	F.	12.3	15.0	16.6	22.8	24.9	26.9	33.4	34.8	37.6	59 24.92	− 0.40	+13.66	+13.72	18 59 38.24	+ 0.14
	14	B. A. C. 6579[1]. .	F.	. .	. .	30.7	33.8	37.0	40.0	43.3	. .	. .	8 36.96	− 0.40	. .	+13.72	19 8 50.28	− 1.06
	15	B. A. C. 6579[2]. .	F.	18.8	22.8	25.0	. .	. .	. .	50.2	52.6	56.6	8 37.67	− 0.40	. .	+13.72	19 8 50.90	− 1.00
	16	B. A. C. 6635 . .	F.	. .	. .	30.2	33.7	37.0	40.4	43.9	. .	. .	16 37.04	− 0.40	. .	+13.72	19 16 50.30	− 1.02
	17	B. A. C. 6676 . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	18	B. A. C. 6698 . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	19	κ Aquilæ. . . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	20	γ Aquilæ. . . .	F.	51.2	53.9	55.3	1.5	3.7	5.7	12.0	13.6	16.1	40 3.67	− 0.40	+13.75	+13.72	19 40 16.90	0.00
	21	α Aquilæ. . . .	F.	. .	. .	21.4	23.6	25.7	27.7	29.9	. .	. .	44 25.66	− 0.40	+13.72	+13.72	19 44 38.98	+ 0.04
	22	λ Ursæ Minoris. .	F.	. .	. .	. .	. .	. .	55 0	46.0	. .	. .	50 7.40	− 0.59	. .	+13.72	19 50 20.53	− 0.26
	23	B. A. C. 6912 . .	F.	. .	. .	. .	. .	. .	. .	24.6	26.4	29.2	1 15.80	− 0.40	. .	+13.72	20 1 29.12	− 0.65
	24	B. A. C. 7029 . .	F.	22.4	25.5	27.3	34.5	36.8	39.2	46.5	48.2	51.3	18 36.85	− 0.40	. .	+13.72	20 18 50.15	− 0.49
	25	ϵ Delphini . . .	F.	46.0	49.0	50.5	56.7	58.8	0.9	7.0	8.6	11.2	26 53.81	− 0.40	+13.77	+13.72	20 27 12.11	0.00
	26	Polaris. . . .	S.	. .	. .	30.5	57.0	24.5	48.0	14.0	. .	. .	11 23.80	+ 0.10	. .	+13.74	1 11 37.66	+ 2.82
6	27	Moon II . . .	S.	45.9	48.7	50.8	57.5	0.0	2.4	9.5	11.4	14.3	44 0.06	− 0.46	. .	+13.93	19 44 13.53	−72.65
	28	λ Ursæ Minoris. .	S.	. .	. .	. .	. .	6.5	56.5	43.0	. .	. .	50 6.80	− 3.25	. .	+13.93	19 50 27.43	+ 3.85
	29	τ Aquilæ. . . .	S.	34.0	36.6	38.2	14.4	16.3	48.4	54.7	56.1	58.9	57 46.40	− 0.46	+13.91	+13.93	19 57 59.85	+ 0.01
	30	α^2 Capricorni. . .	S.	38.5	41.2	43.0	19.2	51.1	53.1	59.5	1.1	3.7	10 51.16	− 0.46	+13.92	+13.93	20 11 4.65	+ 0.05
	31	Polaris. . . .	Sk.	. .	. .	28.0	54.5	21.0	49.0	14.0	. .	. .	11 21.30	− 2.78	. .	+14.20	1 11 32.72	− 2.54
	32	Mercury, C. . .	Sk.	29.9	32.4	34.0	40.2	42.3	44.3	50.6	52.0	54.6	49 42.26	− 0.71	. .	+14.20	1 49 55.75	− 0.02
	33	α Arietis . . .	Sk.	36.6	39.4	41.0	47.7	50.0	52.2	58.7	0.4	3.3	59 49.92	− 0.71	+14.14	+14.20	2 0 3.41	+ 0.07
7	34	Sun I, S . . .	Sk	16.0	18.4	20.1	26.5	28.7	30.9	37.3	38.9	41.6	56 28.71	− 0.71	. .	+14.21	2 56 42.21	. .
	35	Sun II, N . . .	Sk.	28.8	31.5	32.9	39.6	41.7	43.7	50.3	51.9	54.4	58 41.64	− 0.71	. .	+14.21	2 58 55.14	. .
	36	Venus I, S. . .	Sk.	28.0	30.9	32.4	. .	. .	. .	49.9	51.6	54.4	13 41.20	− 0.71	. .	+14.22	4 13 54.71	+ 0.39
	37	Venus II, N. . .	Sk.	. .	. .	37.5	39.7	42.0	44.1	46.4	. .	. .	13 41.94	− 0.71	. .	+14.22	4 13 55.45	− 0.35
	38	α Tauri . . .	Sk.	14.4	17.0	18.6	24.7	27.0	29.3	35.6	37.2	39.8	28 27.07	− 0.72	+14.26	+14.22	4 28 40.57	− 0.06
	39	β Orionis. . . .	Sk.	. .	. .	10.7	12.6	14.7	16.8	18.8	. .	. .	8 14.72	− 0.72	+14.20	+14.22	5 8 28.22	+ 0.02
	40	β Tauri . . .	Sk.	51.4	54.3	56.0	3.0	5.3	7.7	14.6	16.3	19.3	18 5.32	− 0.72	+14.21	+14.22	5 18 18.82	− 0.01
	41	α Leonis . . .	Sk.	14.4	16.9	18.4	24.7	26.8	28.9	35.1	36.7	39.3	1 26.80	− 0.67	+14.25	+14.25	10 1 40.38	− 0.04
	42	X, 3	Sk.	37.2	40.5	42.0	. .	. .	. .	2.4	4.4	7.6	12 52.45	− 0.71	. .	+14.25	10 13 5.90	− 0.40
	43	X, 9	Sk.	27.0	30.1	32.0	39.0	41.8	44.2	51.6	53.4	56.3	28 41.71	− 0.71	. .	+14.25	10 28 55.25	− 0.52
	44	l Leonis . . .	Sk.	12.9	15.6	17.2	23.3	25.4	27.5	33.6	35.3	37.9	42 25.41	− 0.68	+14.23	+14.25	10 42 38.98	+ 0.02
	45	XI, 3	Sk.	4.4	7.8	9.5	16.7	19.2	21.7	29.1	30.9	34.0	12 19.26	− 0.71	. .	+14.26	11 12 32.81	− 0.81
	46	τ Leonis . . .	Sk.	2.7	5.2	6.8	12.9	14.9	17.0	23.0	24.6	27.3	21 14.92	− 0.67	+14.31	+14.26	11 21 28.51	− 0.07
	47	XI, 9	Sk.	31.9	34.9	36.6	41.2	43.7	46.0	48.2	50.6	. .	33 46.12	− 0.70	. .	+14.26	11 33 59.68	− 0.06
	48	XI, 12	Sk.	. .	. .	6.4	8.6	10.9	12.9	15.3	. .	. .	42 10.82	− 0.70	. .	+14.26	11 42 24.38	− 1.01

12, 16. Bisections at sets B and D.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″								″	° ′ ″	°	′ ″	° ′ ″	″
1																	
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12	292 38	10 14.2	3.8	26.5	29.5	37	944	. .	948	. .	950	76.9	67 18 50.7	. .	+ 2 20.3	118 27 32.2	
13	334 44	6.7	3.8	26.5	0.0	37	. .	792	. .	746	. .	76.9	25 12 46.4	40.3	+ 27.8	76 19 35.4	+ 0.4
14	10 38	14.0	10.8	4.8	5.2	30	376	. .	. .	. .	376	76.9	349 17 0.9	. .	— 11.2	40 23 10.9	−22.9
15	10 38	14.0	10.8	4.8	5.2	29	. .	940	. .	. .	. .	76.9	349 16 54.0	. .	— 11.2	40 23 4.0	−22.9
16	15 10	10.1	7.2	0.4	0.8	33	. .	646	. .	642	. .	76.9	344 45 46.0	. .	— 16.1	35 51 51.1	−23.5
17	345 34	3.7	0.1	22.1	27.3	38	. .	. .	. .	820	826	76.9	14 22 59.6	. .	+ 15.1	65 29 35.9	−18.5
18	355 14	4.3	1.6	24.1	26.9	37	. .	. .	. .	756	766	76.9	4 42 44.3	. .	+ 4.9	55 49 10.4	−20.6
19	313 44	6.6	3.6	24.5	0.7	31	. .	. .	. .	216	226	76.9	46 11 5.9	. .	+ 1 1.4	97 18 28.5	+ 0.3
20	331 22	3.1	0.3	22.2	26.7	38	. .	. .	. .	298	306	76.9	28 34 51.2	40.0	+ 32.1	79 41 44.5	− 1.5
21	329 36	3.9	2.0	24.5	28.0	38	944	950	. .	958	944	76.9	30 21 2.3	. .	+ 34.5	81 27 58.0	− 1.6
22																	
23	344 18	0.2	26.8	19.3	22.0	37	. .	. .	. .	060	040	76.9	15 38 28.7	. .	+ 16.5	66 45 6.4	−17.5
24	352 50	4.0	1.0	23.5	26.6	37	910	896	. .	872	856	76.9	7 6 45.4	. .	+ 7.4	58 13 14.0	−19.6
25	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .		41.5			
26																	
27																	
28																	
29																	
30																	
31	49 40	5.6	5.2	25.5	27.9	37	220	180	190	200	150	76.4	310 16 36.4	56.4	— 1 8.0	1 21 49.6	− 1.1
32	330 2	7.0	6.3	27.5	0.1	35	. .	755	. .	627	. .	76.4	29 54 15.0	. .	+ 33.2	81 1 9.4	
33	343 54	8.1	7.5	29.1	1.0	32	. .	545	. .	490	. .	76.4	16 1 27.7	. .	+ 16.6	67 8 5.5	+ 0.6
34	337 42	7.3	6.3	27.5	29.8	38	507	434	. .	. .	. .	76.4	22 14 57.0	. .	+ 23.6	73 21 41.8	
35	338 14	7.8	7.8	28.3	0.4	39	. .	. .	. .	462	440	76.4	21 43 14.3	57.5	+ 23.0	72 50 8.5	
36	342 42	7.0	6.9	28.5	29.9	34	752	752	. .	. .	. .	76.4	17 14 0.5	. .	+ 17.8	68 20 39.5	
37	342 42	7.0	6.9	28.5	29.9	33	. .	. .	. .	968	922	76.4	17 13 49.5	59.9	+ 17.8	68 20 28.5	
38	337 18	15.6	15.9	6.4	6.4	33	. .	962	. .	918	. .	76.4	22 37 56.6	. .	+ 23.9	73 44 41.7	+ 1.2
39	312 42	6.8	6.3	27.5	1.5	32	. .	841	. .	778	. .	76.4	47 13 31.1	. .	+ 1 1.8	98 20 54.1	− 1.0
40	349 32	7.9	8.4	28.6	0.1	32	. .	426	. .	399	. .	76.4	10 23 26.0	61.2	+ 10.5	61 29 57.7	+ 0.6
41	333 38	17.0	13.6	5.4	8.0	35	. .	027	. .	995	. .	77.2	26 18 13.6	54.6	+ 28.6	77 25 3.4	+ 0.4
42	284 56	15.2	12.2	6.1	6.0	37	. .	490	. .	361	. .	77.2	75 0 49.2	. .	+ 3 33.4	126 10 43.8	−14.8
43	287 58	16.5	16.6	7.0	9.4	32	310	289	. .	. .	. .	77.2	72 57 32.7	. .	+ 3 7.6	124 7 1.5	−14.7
44	332 16	13.0	11.2	1.5	4.4	36	. .	190	. .	177	. .	77.2	27 40 28.2	. .	+ 30.6	78 47 20.0	0.0
45	288 2	9.2	7.5	27.0	0.6	37	900	868	. .	. .	. .	77.2	71 54 49.4	. .	+ 2 57.6	123 4 8.2	−15.1
46	324 36	9.8	8.1	28.5	2.5	34	. .	681	. .	629	. .	77.2	35 20 1.8	. .	+ 41.6	86 27 4.6	− 1.0
47	293 18	16.5	13.6	3.3	7.2	39	. .	. .	. .	991	980	77.2	66 39 29.0	. .	+ 2 15.5	117 48 5.7	−14.3
48	295 2	8.0	7.6	25.6	28.9	37	658	598	. .	. .	. .	77.2	64 54 44.5	. .	+ 2 5.5	116 3 11.2	−14.0

No.	Barom.	At. Ther.
	in.	°
15	29.77	44.5
20	29.76	44.0
25	29.78	44.0
31	30.09	56.0
35	30.105	54.0
37	30.10	58.5
40	30.10	61.0
41	30.11	55.6

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
12	−51 58.8	+ 15 25.1	. .	− 36 33.7
32	— 3.8	. .	+ 0.2	— 3.6
34	— 3.3	— 15 46.6	. .	— 15 49.9
35	— 3.2	+ 15 46.6	. .	+ 15 43.4
36	— 1.6	— 5.5	. .	— 7.1
37	— 1.6	+ 5.5	. 0.0	+ 3.9

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
May 7	1	XI, 13	Sk.	55.7	58.6	0.4	7.7	10.3	12.5	19.7	21.6	24.5	43 10.11	− 0.71	. .	+14.26	11 43 23.66	− 1.00
	2	XI, 14	Sk.	58.3	1.4	3.2	11.2	13.8	16.4	24.0	26.0	29.0	46 13.70	− 0.72	. .	+14.26	11 46 27.24	− 1.01
	3	*o* Virginis	Sk.	22.7	25.3	26.7	33.0	35.2	37.3	43.5	44.9	47.6	58 35.13	− 0.68	+14.32	+14.26	11 58 48.71	− 0.08
	4	λ Ursæ Minoris	Sk.	. .	. .	. .	. .	. .	. .	22.0	44.0	. .	50 8.15	+ 3.77	. .	+14.30	19 50 26.22	+ 1.73
	5	a^2 Capricorni	Sk.	38.3	41.2	42.6	48.8	51.0	53.0	59.3	0.9	3.4	10 50.94	− 0.59	+14.30	+14.31	20 11 4.66	+ 0.05
	6	*e* Delphini	Sk.	46.0	48.7	50.3	56.5	58.5	0.6	6.8	8.3	11.0	26 58.52	− 0.55	+14.27	+14.31	20 27 12.28	+ 0.09
	7	Moon II	Sk.	. .	. .	37.8	40.3	42.6	44.7	47.0	. .	. .	43 42.48	− 0.60	. .	+14.31	20 43 56.19	−71.72
8	8	*d* Leonis	E.	58.9	1.7	3.4	9.9	12.0	14.3	20.8	22.6	25.3	7 12.10	− 0.60	+14.04	+14.06	11 7 25.56	− 0.04
	9	*d* Crateris	E.	37.0	39.8	41.5	47.8	49.9	52.0	58.3	59.9	2.5	12 49.86	− 0.46	+14.05	+14.06	11 13 3.46	− 0.01
	10	λ Draconis (R.)	E.	. .	. .	29.9	36.5	41.6	48.3	54.0	. .	. .	23 42.06	+ 0.98	. .	+14.06	11 25 57.10	− 0.61
	11	*v* Leonis	E.	5.2	7.8	9.4	15.4	17.4	19.5	25.7	27.1	29.8	30 17.48	− 0.51	+14.00	+14.06	11 30 31.03	+ 0.02
	12	XI, 9	E.	32.3	35.3	36.9	43.9	46.1	48.5	55.5	57.0	0.0	33 46.17	− 0.41	. .	+14.06	11 33 59.82	− 0.95
	13	XI, 12	E.	. .	. .	6.3	8.7	11.0	13.3	15.0	. .	. .	42 10.98	− 0.41	. .	+14.06	11 42 24.63	− 1.00
	14	XI, 13	E.	. .	. .	5.3	8.0	10.1	12.5	15.0	. .	. .	43 10.18	− 0.39	. .	+14.06	11 43 23.85	− 0.99
	15	*o* Virginis	E.	22.8	25.4	27.0	33.2	35.4	37.5	43.6	45.2	47.9	58 35.33	− 0.54	+13.97	+14.07	11 58 48.86	+ 0.08
	16	4 Draconis (R.)	E.	5.2	19.4	26.6	55.7	6.6	17.7	47.0	54.5	7.0	6 6.63	+ 1.50	. .	+14.07	12 6 22.20	− 1.30
	17	*η* Virginis	E.	3.4	5.8	7.5	13.3	15.3	17.4	23.7	25.2	27.8	13 15.49	− 0.51	+13.92	+14.07	12 13 29.05	+ 0.13
	18	*κ* Draconis (R.)	E.	. .	. .	12.4	18.8	55.4	1.0	7.0	. .	. .	27 54.92	+ 0.99	. .	+14.07	12 28 9.98	− 0.29
	19	12 Canum Venat.	E.	. .	. .	. .	. .	. .	. .	6.8	8.9	12.2	49 56.40	− 0.71	+14.28	+14.07	12 50 9.76	− 0.21
	20	XIII, 3	E.	. .	. .	31.0	33.6	36.0	38.4	40.7	. .	. .	5 35.94	− 0.40	. .	+14.07	13 5 49.61	− 1.43
	21	XIII, 4	E.	12.9	16.0	18.5	25.6	28.1	30.6	38.0	40.2	43.3	6 28.13	− 0.38	. .	+14.07	13 6 41.82	− 1.45
	22	Polaris, S. P.	E.	. .	. .	2.0	36.0	10.0	43.0	. .	. .	. .	11 9.90	+12.69	. .	+14.07	1 11 36.66	+ 0.77
	23	*a* Virginis	E.	9.0	11.5	13.1	19.4	21.4	23.5	29.8	31.3	34.0	18 21.44	− 0.47	+13.91	+14.09	13 18 35.04	+ 0.11
	24	*a* Cygni	E.	. .	. .	52.0	55.0	57.9	0.8	6.6	8.8	12.2	36 54.99	− 0.76	+14.32	+14.11	20 37 8.34	− 0.20
	25	*ζ* Cygni	E.	7.0	10.0	11.7	18.8	21.1	23.4	30.5	32.4	35.4	7 21.14	− 0.62	+14.17	+14.12	21 7 34.64	− 0.04
	26	*a* Cephei	E.	54.1	59.8	3.2	16.0	20.4	24.9	37.7	41.1	46.8	15 20.44	− 0.97	. .	+14.12	21 15 33.59	− 0.28
	27	*e* Pegasi	E.	36.7	38.4	42.3	44.5	46.5	48.6	50.8	54.7	56.4	37 46.54	− 0.52	+14.12	+14.12	21 38 0.14	+ 0.01
	28	Moon II, N.	E.	16.7	19.6	21.2	27.8	30.2	32.3	38.9	40.7	43.5	41 30.10	− 0.40	. .	+14.12	21 41 43.82	−70.36
9	29	*τ* Leonis	F.	2.5	5.1	6.5	12.8	14.8	16.9	22.9	24.4	27.0	21 14.77	− 0.57	+14.31	+14.31	11 21 28.51	− 0.05
	30	*v* Leonis	F.	4.9	7.5	9.0	15.0	17.2	19.3	25.5	26.9	29.4	30 17.19	− 0.55	+14.32	+14.31	11 30 30.95	− 0.05
	31	Groom. 4163, S. P.	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	32	*o* Virginis	F.	. .	. .	30.8	33.0	35.0	37.0	39.2	. .	. .	58 35.00	− 0.60	+14.30	+14.31	11 58 48.71	− 0.07
	33	*η* Virginis (R.)	F.	2.0	4.5	6.0	12.0	14.2	16.2	22.4	24.0	26.4	13 14.19	+ 0.26	. .	+14.31	12 13 28.76	− 0.16
	34	*κ* Draconis (R.)	F.	. .	. .	41.9	47.9	54.0	59.9	6.5	. .	. .	27 54.04	+ 1.09	. .	+14.32	12 28 9.45	− 0.79
	35	21 Cassiopeæ, S. P.	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	36	*θ* Virginis	F.	. .	. .	. .	. .	. .	. .	21.6	23.0	25.6	3 13.32	− 0.53	+14.31	+14.33	13 3 27.13	− 0.02
	37	XIII, 6	F.	28.5	31.5	33.2	40.5	42.5	44.9	52.2	54.0	56.0	9 42.70	− 0.41	. .	+14.33	13 9 56.62	− 1.44
	38	Polaris, S. P.	F.	. .	. .	. .	32.0	. .	. .	. .	. .	. .	11 7.00	+15.89	. .	+14.33	1 11 37.22	+ 0.95
	39	B. A. C. 4526	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	40	B. A. C. 4640	F.	1.6	4.7	6.4	13.4	15.8	18.1	25.1	26.9	29.7	47 15.74	− 0.73	. .	+14.34	13 47 29.35	− 2.00
	41	B. A. C. 4723	F.	52.8	55.6	57.4	4.5	6.7	9.2	16.3	18.0	20.9	8 6.82	− 0.73	. .	+14.35	14 8 20.43	− 2.04
	42	B. A. C. 4758	F.	. .	. .	28.3	31.0	33.7	36.3	39.0	. .	. .	13 33.66	− 0.81	. .	+14.35	14 13 47.20	− 2.20
	43	B. A. C. 4804	F.	44.9	48.9	51.2	0.6	4.0	7.3	17.0	19.3	23.5	24 4.06	− 0.95	. .	+14.35	14 24 17.46	− 2.70
	44	B. A. C. 4808	F.	58.2	1.2	3.0	9.9	12.4	14.7	22.0	23.7	26.7	26 12.42	− 0.74	. .	+14.35	14 26 26.03	− 2.08
	45	B. A. C. 4841	F.	0.4	4.0	6.0	14.7	17.4	20.3	28.9	31.0	34.6	33 17.48	− 0.87	. .	+14.35	14 33 30.96	− 2.48
	46	*e* Bootis	F.	3.7	6.5	8.1	15.1	17.5	19.7	26.7	28.4	31.3	39 17.44	− 0.71	+14.36	+14.35	14 39 31.08	− 0.03
	47	a^2 Libræ	F.	29.7	32.3	34.0	40.5	42.6	44.6	51.1	52.6	55.3	43 42.52	− 0.48	+14.27	+14.35	14 43 56.36	+ 0.07
10	48	Moon II	S.	11.7	13.4	17.4	19.5	21.7	23.5	25.8	30.0	31.6	31 21.62	− 0.58	. .	+14.82	23 31 35.80	−68.33
	49	*a* Andromedæ	S.	23.9	26.8	33.3	35.7	38.0	40.2	42.4	48.9	51.9	1 37.90	− 0.79	+14.82	. .		

4. Transit at wires D_1 D_2; bisection at wire D_2.
18, 31, 34, 35. Bisections at sets B and D.
28. Bisections at wires V–VII.
44. Bisections at wires II and III.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	289 20	10 9.5	8.3	28.2	3.7	33	. .	. .	. .	750	730	77.2	70 35 48.2	. .	+ 2 45.8	121 44 55.2	−15.2
2	283 28	10.3	8.9	27.8	3.5	35	. .	. .	. .	472	450	77.2	76 28 14.6	. .	+ 4 0.3	127 38 36.1	−16.2
3	330 28	10.4	17.5	2.9	7.6	30	991	967	. .	. .	. .	77.2	29 27 10.2	. .	+ 33.4	80 34 4.8	− 1.6
4	49 56	13.9	9.1	1.6	2.7	32	. .	. .	. .	355	. .	77.2	303 59 29.8	. .	− 1 10.8	1 4 40.2	− 1.8
5	308 8	12.8	9.2	0.0	4.4	36	. .	380	. .	269	. .	77.2	51 48 28.4	. .	+ 1 15.5	102 56 5.1	− 1.4
6	331 56	10.0	. .	29.7	. .	37	. .	. .	. .	265	222	77.2	28 0 42.1	41.8	+ 31.6	79 7 34.9	− 2.9
7																	
8	342 16	19.5	19.2	10.5	11.3	35	. .	930	. .	890	. .	75.0	17 40 29.4	66.0	+ 18.0	68 47 8.6	− 0.9
9	306 58	19.0	17.5	7.2	9.6	35	. .	590	. .	530	. .	75.0	52 58 22.1	. .	+ 1 14.9	104 5 58.2	− 0.7
10	148 48	23.2	22.0	13.2	14.5	32	320	255	. .	240	230	75.0	211 7 35.1	. .	+ 34.2	19 58 11.9	− 2.6
11	320 56	16.5	15.5	5.7	7.8	36	. .	960	. .	915	. .	75.0	39 0 41.3	. .	+ 46.0	90 7 48.5	+ 0.3
12	293 16	19.4	18.2	9.0	12.0	32	. .	540	. .	450	. .	75.0	66 39 36.4	. .	+ 2 10.8	117 48 8.4	−14.4
13	295 2	18.7	15.7	7.9	9.9	37	565	535	. .	. .	. .	75.0	64 54 51.7	. .	+ 2 0.7	116 3 13.6	−14.1
14	289 20	11.8	10.8	1.0	3.3	34	. .	. .	. .	180	115	75.0	70 35 54.0	. .	+ 2 39.9	121 44 55.1	−15.3
15	330 30	16.5	15.6	5.4	8.0	39	. .	040	. .	990	. .	75.0	29 27 13.2	. .	+ 32.2	80 34 6.6	+ 0.2
16	140 32	9.6	9.4	0.8	2.2	37	. .	715	. .	655	. .	75.0	219 24 45.3	. .	+ 46.8	11 40 49.1	− 2.6
17	321 6	17.4	16.7	7.5	10.4	38	. .	080	. .	050	. .	75.0	38 51 0.2	. .	+ 45.9	89 58 7.3	+ 0.4
18	148 22	16.3	16.5	5.7	6.7	37	800	. .	. .	. .	735	75.0	211 34 53.7	. .	+ 35.1	19 30 52.4	− 2.8
19	0 2	19.2	18.6	9.0	9.5	32	. .	. .	. .	840	825	75.0	359 53 41.9	. .	− 0.1	51 0 3.0	+ 0.1
20	289 54	15.7	13.8	3.3	7.0	37	690	675	. .	. .	. .	75.0	70 2 50.6	. .	+ 2 36.7	121 11 48.5	−15.1
21	285 50	15.0	12.7	0.4	4.5	38	. .	860	. .	830	. .	75.0	74 7 7.1	. .	+ 3 18.8	125 16 47.1	−15.5
22	52 22	15.6	13.2	4.8	4.8	30	495	. .	460	. .	. .	75.0	307 33 0.5	. .	− 1 14.6	358 38 7.1	− 1.9
23	310 34	18.0	16.9	7.3	10.3	37	. .	700	. .	665	. .	75.0	49 22 54.4	58.5	+ 1 6.9	100 30 22.5	+ 0.5
24	5 52	17.0	15.2	6.2	7.5	35	. .	. .	. .	020	970	76.0	354 4 13.5	. .	− 6.0	45 10 28.7	− 1.3
25	350 46	17.5	17.0	6.4	8.3	38	. .	450	. .	415	. .	76.0	9 11 6.2	57.0	+ 9.3	60 17 36.7	− 0.5
26	23 6	18.2	15.9	7.3	8.1	39	. .	035	. .	065	. .	76.0	336 51 16.2	. .	− 24.6	27 57 12.8	− 3.5
27																	
28	301 10	14.5	11.3	2.5	5.5	30	. .	. .	165	030	745	76.0	58 44 52.9	59.0	+ 1 34.3	109 52 48.4	
29	324 36	20.6	18.0	8.7	11.6	34	. .	424	. .	434	. .	73.0	35 20 4.2	. .	+ 39.6	86 27 5.0	− 0.4
30	320 56	14.3	11.8	0.4	5.3	37	. .	350	. .	266	. .	73.0	39 0 41.5	71.1	+ 45.3	90 7 48.0	− 0.1
31	67 18	25.7	24.3	13.8	15.6	34	580	. .	. .	. .	. .	73.0	292 38 11.2	. .	− 2 13.6	343 42 18.8	+ 1.1
32	330 30	6.8	6.0	24.2	28.4	39	. .	. .	. .	800	794	73.0	29 27 13.5	. .	+ 31.7	80 34 6.4	+ 0.1
33	218 46	18.0	14.8	4.7	5.8	30	. .	. .	. .	406	386	73.0	141 8 58.9	. .	− 45.3	89 58 7.6	+ 0.8
34	148 22	13.5	11.0	0.4	4.2	38	. .	. .	. .	130	160	73.0	211 34 53.6	. .	+ 34.6	19 30 53.0	− 2.0
35	66 42	14.2	9.9	0.2	3.8	33	004	992	. .	. .	. .	73.0	293 13 34.2	. .	− 2 10.4	344 17 45.0	− 5.6
36	316 12	14.6	11.5	1.3	5.3	37	. .	. .	. .	882	886	73.0	43 44 50.9	66.0	+ 54.1	94 52 6.2	− 0.7
37	291 10	19.2	16.5	6.5	9.2	38	. .	392	. .	362	. .	73.0	68 47 2.6	. .	+ 2 24.5	119 55 48.3	−15.0
38																	
39	346 4	18.2	15.1	4.5	8.2	39	830	834	. .	. .	. .	73.0	13 53 23.6	. .	+ 14.0	64 59 58.8	− 6.0
40	350 18	17.9	16.3	4.7	7.6	32	. .	160	. .	168	. .	73.0	9 37 26.6	. .	+ 9.6	60 43 57.4	− 6.4
41	350 44	15.1	12.1	0.4	3.8	34	. .	180	. .	044	. .	73.0	9 11 51.7	. .	+ 9.2	60 18 22.1	− 7.6
42	0 24	14.4	13.0	1.4	3.7	38	. .	. .	. .	092	018	73.0	359 32 53.9	64.8	− 0.4	50 39 14.7	− 6.6
43	11 28	15.4	13.5	3.4	4.8	39	. .	786	. .	756	. .	73.0	348 29 21.0	. .	− 11.5	39 35 30.7	− 5.9
44	351 58	8.1	6.3	23.7	27.4	35	. .	380	376	. .	. .	73.0	7 58 5.3	. .	+ 7.9	59 4 34.4	− 8.6
45	5 14	17.0	15.8	4.4	6.5	36	. .	974	. .	982	. .	73.0	354 42 39.7	. .	− 5.2	45 48 55.7	− 7.4
46																	
47	305 32	13.0	10.3	29.7	4.2	32	942	980	. .	. .	. .	73.0	54 23 29.7	68.0	+ 1 18.6	105 31 9.5	− 2.9
48																	
49																	

No.	Barom.	At. Ther.
	in.	°
6	30.11	43.6
9	30.08	67.0
23	30.10	62.0
25	30.10	56.5
29	30.11	57.0
31	30.065	73.0
32	30.07	70.0
42	30.07	68.0
47	30.06	66.5

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
28	−49 51.8	+ 15 58.0	. .	− 33 53.0

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
May 10	1	γ Pegasi	S.	17.7	20.3	21.9	28.2	30.3	32.3	38.7	40.4	43.0	6 30.31	− 0.70	+14.81	. .	. . .	. .
	2	Polaris	Sk.	. .	. .	45.0	12.5	35.0	1.5	29.0	. .	. .	11 36.60	−19.00	. .	+14.94	1 11 32.54	− 4.48
	3	β Arietis	Sk.	13.0	15.5	17.2	23.7	25.9	28.0	34.6	36.1	38.8	47 25.87	− 0.73	+14.87	+14.94	1 47 39.08	+ 0.09
	4	α Arietis	Sk.	36.0	38.9	40.2	47.0	49.1	51.4	58.0	59.8	2.6	59 49.22	− 0.75	+14.95	+14.94	2 0 3.41	0.00
11	5	Sun I, S.	Sk.	49.1	51.9	53.6	59.9	2.0	4.3	10.6	12.2	15.0	12 2.07	− 0.71	. .	+14.94	3 12 16.30	. .
	6	Sun II, N.	Sk.	2.8	5.7	7.3	13.6	15.7	17.9	24.5	26.0	28.8	14 15.81	− 0.71	. .	+14.94	3 14 30.04	. .
	7	α Tauri	Sk.	13.7	16.4	18.0	24.3	26.4	28.6	34.9	36.5	39.1	28 26.43	− 0.70	+14.89	+14.94	4 28 40.67	+ 0.03
	8	Venus I, N.	Sk.	12.0	15.0	16.6	. .	. .	. .	. .	36.0	38.8	34 25.46	− 0.74	. .	+14.94	4 34 39.66	+ 0.37
	9	Venus II, S.	Sk.	. .	. .	21.8	23.9	26.0	28.4	30.7	. .	. .	34 26.16	− 0.74	. .	+14.94	4 34 40.36	− 0.33
	10	β Orionis	Sk.	1.5	4.0	5.5	11.6	13.7	15.8	21.9	23.6	26.2	8 13.76	− 0.58	+15.01	+14.94	5 8 28.12	− 0.07
	11	β Tauri	Sk.	50.7	53.6	55.2	2.3	4.7	6.9	13.9	15.8	18.6	18 4.63	− 0.79	+14.96	+14.94	5 18 18.78	− 0.04
	12	α Ursæ Majoris	Ha	17.9	23.7	26.9	40.2	44.7	49.1	2.3	5.6	11.2	55 44.62	− 0.94	. .	+14.84	10 55 58.52	− 0.01
	13	δ Leonis	Ha	58.0	0.8	2.4	9.0	11.2	13.4	20.0	21.6	24.3	7 11.19	− 0.54	+14.86	+14.84	11 7 25.49	− 0.08
	14	δ Crateris	Ha	36.3	38.9	40.4	46.9	49.0	51.1	57.5	59.0	1.6	12 48.97	− 0.38	+14.83	+14.84	11 13 3.43	− 0.01
	15	τ Leonis	Ha	1.9	4.4	6.0	12.0	14.1	16.2	22.3	23.9	26.4	21 14.13	− 0.45	+14.84	+14.84	11 21 28.52	− 0.02
	16	λ Draconis	Ha	. .	. .	32.0	38.1	44.2	50.3	56.3	. .	. .	23 44.18	− 1.17	. .	+14.83	11 23 57.84	+ 0.26
	17	υ Leonis	Ha	4.4	6.9	8.4	14.6	16.6	18.6	24.7	26.3	28.8	30 16.59	− 0.44	+14.79	+14.83	11 30 30.98	0.00
	18	γ Cephei, S.P.	Ha	. .	. .	8.7	59.9	50.7	41.9	32.4	. .	. .	33 50.72	+ 0.78	. .	+14.83	23 34 6.33	− 0.38
	19	β Leonis	Ha	2.2	4.8	6.5	22.8	24.8	26.9	33.3	35.0	37.6	42 24.88	− 0.51	+14.81	+14.83	11 42 39.20	0.00
	20	Groom. 4163, S. P.	E.	7.9	58.2	53.0	31.3	24.0	16.7	54.8	49.7	40.3	48 23.99	+ 0.55	. .	+14.67	23 48 39.21	− 0.38
	21	θ Virginis	E.	22.1	24.8	26.4	32.6	34.7	36.7	42.9	44.5	47.1	58 34.64	− 0.48	+14.58	+14.67	11 58 48.83	+ 0.07
	22	4 Draconis	E.	10.0	22.7	29.9	0.2	10.6	20.3	51.0	58.1	10.9	6 10.41	− 1.74	. .	+14.67	12 6 23.34	+ 0.05
	23	η Virginis	Ha	2.2	4.8	6.4	12.4	14.5	16.6	22.6	24.0	26.6	13 14.46	− 0.44	+14.86	+14.67	12 13 28.69	− 0.21
	24	β Corvi	E.	20.0	22.8	24.4	31.0	33.3	35.5	42.1	44.0	46.6	27 33.30	− 0.35	+14.53	+14.67	12 27 47.62	+ 0.10
	25	12 Canum Venat.	E.	. .	. .	53.3	56.0	58.7	1.3	6.5	8.5	11.9	49 56.03	− 0.64	+14.55	+14.67	12 50 10.06	+ 0.12
	26	θ Virginis	E.	0.6	3.2	4.7	10.9	13.0	15.1	21.2	22.7	25.4	3 12.98	− 0.43	+14.55	+14.66	13 3 27.21	+ 0.07
	27	Polaris, S. P.	Sk.	. .	. .	1.0	33.0	6.5	41.0	. .	. .	. .	11 7.52	+11.10	. .	+14.93	1 11 33.55	− 3.73
	28	XIII, 8	Sk.	. .	. .	. .	. .	23.4	25.7	30.3	31.9	34.9	15 21.22	− 0.34	. .	+14.93	13 15 35.81	− 1.45
	29	α Virginis	E.	8.0	10.7	12.3	18.5	20.6	22.7	28.9	30.5	33.3	18 20.61	− 0.40	+14.70	+14.66	13 18 34.87	− 0.00
	30	XIII, 11	Sk.	39.0	42.4	44.3	52.0	54.6	56.9	4.8	6.6	9.7	22 54.48	− 0.28	. .	+14.92	13 23 9.12	− 1.53
	31	B. A. C. 4526	Sk.	23.9	26.8	28.5	35.3	37.5	40.0	46.8	48.5	51.0	26 37.59	− 0.56	. .	+14.92	13 26 51.95	− 1.86
	32	ζ Virginis	E.	51.6	54.0	55.6	1.7	3.7	5.8	11.9	13.5	16.0	28 3.76	− 0.44	+14.68	+14.66	13 28 17.98	− 0.02
	33	η Bootis	E.	15.6	18.4	19.9	26.4	28.7	30.8	37.3	38.7	41.4	48 28.58	− 0.52	+14.87	+14.66	13 48 42.72	− 0.26
	34	B. A. C. 4684	Sk.	47.3	51.3	53.8	3.7	7.0	10.3	20.0	22.6	26.6	58 6.99	− 0.76	. .	+14.93	13 58 21.16	− 2.80
	35	B. A. C. 4723	Sk.	52.0	55.0	56.8	3.9	6.2	8.6	15.6	17.6	30.2	8 6.21	− 0.58	. .	+14.93	14 8 20.56	− 2.04
	36	B. A. C. 4752	Sk,	21.0	25.4	27.7	37.0	41.0	44.3	54.4	56.8	1.0	12 41.02	− 0.77	. .	+14.93	14 12 55.18	− 2.84
	37	B. A. C. 4847[1]	Sk.	23.0	25.7	27.2	. .	. .	. .	. .	. .	. .	34 35.81	− 0.52	. .	+14.93	14 34 50.22	− 1.86
	38	B. A. C. 4847[2]	Sk.	. .	. .	32.0	34.1	36.3	38.4	40.6	. .	. .	34 36.28	− 0.52	. .	+14.93	14 34 50.69	− 1.86
	39	B. A. C. 4897	Sk.	42.2	45.3	47.4	55.3	58.1	0.8	8.5	10.4	13.6	43 57.96	− 0.63	. .	+14.93	14 44 12.26	− 2.28
	40	B. A. C. 4942	Sk.	8.1	11.3	13.3	21.4	24.1	26.8	34.8	36.7	40.2	54 24.08	− 0.65	. .	+14.93	14 54 38.36	− 2.33
	41	B. A. C. 4952	Sk.	50.7	54.7	57.0	6.2	9.3	12.4	21.1	23.6	27.5	56 9.17	− 0.72	. .	+14.93	14 56 23.38	− 2.62
	42	β Libræ	Sk.	48.8	51.3	52.8	59.0	1.0	3.0	9.6	11.0	13.4	10 1.10	− 0.41	+14.77	+14.93	15 10 15.62	+ 0.16
	43	B. A. C. 5091	Sk.	54.2	0.2	3.7	17.0	22.0	26.6	40.7	44.2	49.8	20 22.11	− 0.97	. .	+14.92	15 20 36.06	− 3.77
	44	B. A. C. 5146	Sk.	24.8	27.4	29.0	35.5	37.6	39.8	46.2	47.9	50.6	29 37.64	− 0.53	. .	+14.92	15 29 52.03	− 1.85
	45	B. A. C. 5178[1]	Sk.	10.0	13.2	15.3	. .	. .	. .	35.5	37.3	40.8	34 25.37	− 0.63	. .	+14.92	15 34 39.66	− 2.20
	46	B. A. C. 5178[2]	Sk.	. .	. .	20.9	23.4	26.0	28.4	31.0	. .	. .	34 25.94	− 0.63	. .	+14.92	15 34 40.23	− 2.20
	47	B. A. C. 5234	Sk.	38.7	41.5	43.0	. .	. .	. .	0.2	1.9	4.5	42 51.63	− 0.52	. .	+14.92	15 43 6.03	− 1.88
	48	B. A. C. 5259	Sk.	. .	. .	. .	. .	. .	21.7	26.9	28.9	32.0	46 16.78	− 0.62	. .	+14.92	15 46 31.08	− 2.15
	49	B. A. C. 5307	Sk.	48.1	53.3	56.0	7.9	12.4	16.2	28.0	30.9	36.0	53 12.09	− 0.88	. .	+14.92	15 53 26.13	− 3.18
	50	δ Ophiuchi	Sk.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1																	
2	49 40	10 15.2	. .	6.0	. .	36	700	765	780	715	725	72.4	310 16 35.0	86.3	− 1 4.4	1 21 51.8	+ 0.2
3	341 14	18.8	17.6	5.6	9.1	33	. .	. .	. .	910	840	72.4	18 41 53.7	. .	+ 18.5	69 48 33.4	+ 0.6
4	343 54	21.4	21.3	9.1	10.6	31	. .	. .	. .	951	971	72.4	16 1 27.2	. .	+ 15.7	67 8 4.1	− 0.8
5	338 44	11.8	12.0	29.7	2.6	32	358	280	. .	. .	. .	72.4	21 11 22.5	85.0	+ 21.2	72 18 4.9	
6	339 16	19.2	18.2	3.7	8.7	32	. .	. .	. .	958	862	72.4	20 39 38.1	. .	+ 20.7	71 46 20.0	
7	337 18	19.5	22.3	9.0	8.3	33	. .	. .	. .	965	900	72.4	22 37 56.6	. .	+ 23.1	73 44 40.9	+ 0.5
8	343 40	5.4	6.0	23.5	24.4	37	173	123	. .	. .	. .	72.4	16 16 29.9	. .	+ 16.2	67 23 7.3	
9	343 40	5.4	6.0	23.5	24.4	37	. .	. .	. .	. .	830	72.4	16 16 42.0	. .	+ 16.2	67 23 19.4	
10	312 42	16.0	16.0	3.1	5.5	32	. .	701	. .	706	. .	72.4	47 13 32.5	77.0	+ 1 0.1	98 20 53.8	− 0.5
11	349 32	14.3	14.0	0.3	1.8	32	. .	415	. .	293	. .	72.4	10 23 24.9	. .	+ 10.2	61 29 56.3	− 0.9
12																	
13																	
14																	
15																	
16																	
17																	
18																	
19																	
20	67 18	23.6	20.3	9.2	10.7	35	. .	240	. .	290	. .	75.1	292 38 19.2	. .	− 2 19.6	343 42 20.8	+ 3.2
21	330 28	28.5	19.0	9.3	11.5	30	. .	850	. .	820	. .	75.1	29 27 12.2	. .	+ 33.1	80 34 6.5	+ 0.4
22	39 20	12.8	10.0	1.2	1.7	31	. .	770	. .	850	. .	75.1	320 35 19.6	53.0	− 48.4	11 40 52.4	+ 1.3
23	321 6	25.9	23.7	13.2	15.3	37	. .	670	. .	595	. .	75.1	38 51 1.2	. .	+ 47.3	89 58 9.7	+ 2.9
24	298 22	18.5	15.6	5.2	7.8	34	. .	540	. .	530	. .	75.1	61 34 4.9	. .	+ 1 48.3	112 42 14.4	+ 3.1
25	0 2	17.6	15.0	6.0	6.5	33	. .	. .	. .	050	040	75.1	359 53 42.5	. .	− 0.1	51 0 3.6	+ 1.3
26	316 12	16.4	13.0	2.8	5.4	37	. .	595	. .	555	. .	75.1	43 44 49.2	. .	+ 56.6	94 52 7.0	+ 0.1
27	52 22	16.2	13.2	2.8	5.3	30	754	767	663	. .	. .	75.1	307 33 4.2	. .	− 1 16.9	358 38 8.5	+ 0.3
28	295 54	19.2	17.7	7.4	8.2	36	. .	. .	. .	925	910	75.1	64 2 43.0	. .	+ 2 1.2	115 11 5.4	−14.6
29	310 34	24.9	21.0	8.8	13.1	37	. .	260	. .	235	. .	75.1	49 22 52.4	. .	+ 1 9.0	100 30 22.6	+ 0.6
30	284 50	19.8	16.5	5.5	8.7	34	. .	530	. .	525	. .	75.1	75 6 5.5	. .	+ 3 39.3	126 16 6.0	−15.8
31	346 4	24.5	21.5	11.0	12.7	39	225	220	. .	. .	. .	75.1	13 53 22.3	. .	+ 14.7	64 59 58.2	− 5.6
32	321 6	21.6	17.0	5.5	9.5	34	. .	455	. .	425	. .	75.1	38 50 5.2	. .	+ 47.7	89 57 14.1	+ 1.3
33	340 4	13.7	10.9	28.6	0.6	33	. .	040	. .	053	. .	75.1	19 51 36.5	. .	+ 21.5	70 58 19.2	+ 1.0
34	12 36	16.3	13.5	28.2	4.0	31	. .	290	. .	320	. .	75.1	347 19 12.2	. .	− 13.4	38 25 20.0	− 3.0
35	350 44	15.2	11.5	28.9	2.8	34	. .	018	. .	937	. .	75.1	9 11 52.0	. .	+ 9.7	60 18 22.9	− 7.2
36	12 56	16.0	13.0	3.1	4.6	36	. .	532	. .	460	. .	75.1	347 0 32.9	. .	− 13.8	38 6 40.3	− 4.2
37	338 0	4.0	1.7	20.5	24.5	34	487	495	. .	. .	. .	75.1	21 55 50.0	44.2	+ 24.1	73 2 35.3	−10.3
38	338 0	4.0	1.7	20.5	24.5	34	. .	. .	. .	511	482	75.1	21 55 50.8	. .	+ 24.1	73 2 36.1	−10.3
39	359 22	8.8	6.1	25.0	29.0	34	. .	440	. .	360	. .	75.1	0 33 53.6	. .	+ 0.6	51 40 15.4	− 8.3
40	1 12	12.0	10.0	9.8	6.3	38	721	700	. .	. .	. .	75.1	358 45 5.3	. .	− 1.3	49 51 25.2	− 8.9
41	8 48	15.1	13.6	3.5	5.3	31	. .	. .	. .	874	833	75.1	351 7 22.5	. .	− 9.3	42 13 34.4	− 8.2
42	312 8	14.7	10.9	29.6	3.3	33	572	560	. .	. .	. .	75.1	47 47 45.1	. .	+ 1 5.8	98 55 12.1	+ 1.3
43	24 50	3.0	29.8	20.0	20.7	38	. .	114	. .	121	. .	75.1	335 6 44.7	. .	− 27.7	26 12 38.2	− 8.7
44	339 8	15.4	12.9	2.0	5.0	37	838	848	. .	. .	. .	75.1	20 48 52.9	. .	+ 22.7	71 55 36.8	−12.4
45	358 6	13.3	9.2	29.2	1.7	38	. .	. .	. .	403	. .	75.1	1 50 58.9	. .	+ 1.9	52 57 22.0	−11.8
46	358 6	13.3	9.2	29.2	1.7	38	. .	. .	. .	. .	703	75.1	1 51 3.9	. .	+ 1.9	52 57 27.0	−11.8
47	339 34	13.3	9.2	28.9	1.0	32	902	898	. .	. .	. .	75.1	20 21 33.6	. .	+ 22.1	71 28 16.9	−12.8
48	357 6	14.0	11.0	1.2	4.0	37	. .	. .	. .	742	773	75.1	2 50 50.5	. .	+ 3.0	53 57 14.7	−12.5
49	20 18	17.0	14.3	4.5	4.5	33	. .	004	. .	970	. .	75.1	339 37 40.2	. .	− 22.1	30 43 39.3	−11.8
50	317 42	11.1	7.0	25.1	29.5	38	. .	845	. .	. .	. .	75.1	42 15 2.4	. .	+ 54.0	3 22 17.6	+ 0.8

No.	Barom.	At. Ther.
	in.	°
2	30.18	74.2
5	30.22	81.5
10	30.25	77.0
22	30.43	55.5
37	30.44	52.6

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
5	− 3.1	− 15 52.4	. .	− 15 55.5
6	− 3.0	+ 15 52.4	. .	+ 15 49.4
8	− 1.5	+ 6.1	− 0.1	+ 4.5
9	− 1.5	− 6.1	. .	− 7.6

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
May 11	1	τ Herculis	Sk.	. .	. .	39.5	42.5	45.4	48.4	51.4	. .	. .	15 45.44	− 0.71	. .	+14.92	16 15 59.65	+ 0.16
	2	ζ Ophiuchi	Sk.	48.0	50.8	52.4	58.6	0.7	2.7	9.0	10.4	13.1	30 0.63	− 0.40	+14.84	+14.92	16 30 15.15	+ 0.08
13	3	Polaris, S. P.	F.	. .	. .	3.5	38.0	14.5	. .	. .	. .	. .	11 12.83	+11.36	. .	+14.95	1 11 39.14	+ 0.24
	4	a Virginis	F.	. .	. .	. .	. .	. .	. .	28.8	30.4	32.9	18 20.49	− 0.50	+14.92	+14.95	13 18 34.94	+ 0.01
	5	B. A. C. 4526	F.	24.0	26.8	28.5	35.4	37.5	39.7	46.6	48.3	50.9	26 37.52	− 0.65	. .	+14.95	13 26 51.82	− 1.85
	6	η Bootis	F.	15.6	18.3	20.0	26.4	28.5	30.7	37.1	38.8	41.4	48 28.53	− 0.59	+14.90	+14.95	13 48 42.90	+ 0.01
	7	B. A. C. 4728	F.	50.3	53.7	55.9	4.0	6.8	9.5	17.9	19.9	23.0	9 6.78	− 0.73	. .	+14.95	14 9 21.00	− 2.38
	8	B. A. C. 4847[1]	F.	23.0	25.5	27.3	. .	. .	. .	44.2	45.8	48.2	34 35.67	− 0.50	. .	+14.95	14 34 50.09	− 1.87
	9	B. A. C. 4847[2]	F.	. .	. .	31.9	33.9	36.1	38.2	40.4	. .	. .	34 36.10	− 0.50	. .	+14.95	14 34 50.40	− 1.87
	10	a^2 Libræ	F.	29.2	31.8	33.4	39.9	41.9	44.0	50.4	51.9	54.4	43 41.88	− 0.40	+14.95	+14.95	14 43 56.34	− 0.01
18	11	θ Virginis	S.	59.9	2.3	3.9	10.0	12.0	14.0	20.3	21.8	24.9	3 12.08	− 0.51	+15.51	+15.55	13 3 27.12	0.00
	12	XIII, 5	S.	12.0	15.0	16.8	23.6	25.8	28.3	35.1	36.5	39.8	7 25.88	− 0.43	. .	+15.55	13 7 40.95	− 1.40
	13	Polaris, S. P.	S.	. .	. .	13.5	18.5	. .	. .	. .	. .	. .	11 12.50	+ 5.37	. .	+15.55	1 11 43.42	+ 1.38
	14	XIII, 9	S.	13.3	16.0	18.4	25.8	28.3	30.7	38.0	39.7	43.0	17 28.20	− 0.47	. .	+15.56	13 17 43.17	− 1.47
	15	XIII, 14	S.	. .	. .	29.5	32.1	34.6	37.0	39.8	. .	. .	27 34.60	− 0.47	. .	+15.56	13 27 49.57	− 1.55
	16	η Bootis	S.	14.9	17.6	19.3	25.7	27.9	30.1	36.4	38.2	40.8	48 27.88	− 0.52	+15.58	+15.56	13 48 42.90	− 0.07
	17	α Draconis (R.)	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
	18	XIV, 11	S.	. .	. .	13.0	45.9	18.3	50.9	53.7	. .	. .	18 48.30	− 0.40	. .	+15.56	14 19 3.40	− 1.84
	19	B. A. C. 4980	S.	. .	. .	0.0	3.0	6.0	9.3	15.5	17.8	21.7	1 3.07	− 0 63	. .	+15.56	15 1 18.00	− 2.67
	20	β Libræ	S.	48.0	50.6	52.0	58.3	0.4	2.5	8.8	10.2	12.9	10 0.41	− 0.50	+15.61	+15.56	15 10 15.47	− 0.05
	21	B. A. C. 5072	S.	18.4	21.4	23.2	30.6	33.0	35.3	42.9	44.6	47.7	16 33.01	− 0.58	. .	+15.56	15 16 47.99	− 2.18
	22	B. A. C. 5098	S.	11.0	13.9	15.5	22.7	25.0	27.4	34.4	36.2	39.3	22 25.04	− 0.57	. .	+15.56	15 22 40.03	− 2.10
	23	XV, 16	S.	16.0	19.0	20.5	27.5	29.8	32.2	38.9	40.7	43.7	29 29.81	− 0 4	. .	+15.56	15 29 44.89	− 1.94
	24	B. A. C. 5178[1]	S.	9.3	12.5	14.4	22.0	24.6	27.2	35.0	36.0	39.0	34 24.64	− 0.60	. .	+15.56	15 34 39.60	− 2.26
	25	XV, 23	S.	. .	. .	44.9	47.0	49.1	51.4	53.0	. .	. .	39 49.20	− 0.4	. .	+15.56	15 40 4.27	− 1.89
	26	B. A. C. 5252	S.	. .	. .	26.4	28.6	30.8	33.0	35.1	. .	. .	45 30.78	− 0.55	. .	+15.56	15 45 45.79	− 1.97
	27	B. A. C. 5385	S.	. .	. .	3.9	6.4	9.0	11.6	14.0	. .	. .	4 8.98	− 0.58	. .	+15.57	16 4 23.97	− 2.21
	28	B. A. C. 5426	S.	27.4	30.2	31.9	38.3	40.5	42.7	49.0	50.8	53.5	9 40.48	− 0.54	. .	+15.57	16 9 55.51	− 1.93
	29	B. A. C. 5459	S.	. .	. .	53.3	57.4	1.5	5.6	13.7	16.8	21.0	14 57.39	− 0.60	. .	+15.57	16 15 12.36	− 3.20
	30	B. A. C. 5497	S.	23.6	27.0	29.2	37.9	40.8	43.7	52.3	54.4	58.3	20 40.80	− 0.62	. .	+15.57	16 20 55.75	− 2.39
	31	ζ Ophiuchi	S.	47.7	50.3	51.8	58.0	0.2	2.2	8.5	10.0	12.6	30 0.14	− 0.50	+15.55	+15.57	16 30 15.21	+ 0.02
	32	Polaris	Sk.	. .	. .	. .	. .	. .	. .	8.5	12.5	1.0	11 26.13	+ 4.36	. .	+15.81	1 11 46.30	+ 3.92
	33	β Arietis	Sk.	12.2	14.9	16.4	23.0	25.2	27.5	33.9	35.4	38.2	47 25.19	− 0.75	+15.74	+15.81	1 47 40.25	+ 0.09
	34	α Arietis	Sk.	35.4	38.0	39.6	46.3	48.5	50.8	57.4	59.0	1.8	59 48.53	− 0.74	+15.79	+15.81	2 0 3.60	+ 0.03
19	35	Sun I, S.	Sk.	24.6	27.4	29.0	35.6	37.8	39.9	46.5	48.1	50.9	43 37.76	− 0.75	. .	+15.81	3 43 52.82	. .
	36	Sun II, N.	Sk.	39.6	42.3	43.9	50.6	52.7	54.8	1.4	3.2	5.7	45 52.70	− 0.75	. .	+15.81	3 46 7.76	. .
	37	ηβ Orionis	Sk.	0.8	3.3	4.9	11.0	13.0	15.2	21.5	22.8	25.5	8 13.11	− 0.86	+15.94	+15.81	5 8 28.06	− 0.13
	38	β Tauri	Sk.	49.9	52.7	54.4	1.4	3.9	6.3	13.2	14.8	17.7	18 3.81	− 0.72	+15.72	+15.81	5 18 18.90	+ 0.07
	39	Moon I,	Sk.	. .	. .	45.4	47.8	50.3	52.5	55.0	. .	. .	29 50.20	− 0.73	. .	+15.82	7 30 5.29	+73.16
	40	β Geminorum	Sk.	7.0	10.0	11.7	18.6	21.7	23.3	30.3	32.1	34.9	37 21.00	− 0.72	+15.75	+15.82	7 37 36.10	+ 0.04
	41	XIII, 5	Sk.	12.0	14.9	16.6	23.6	25.9	28.3	35.1	37.0	39.8	7 25.91	− 0.92	. .	+15.83	13 7 40.72	− 1.39
	42	Polaris, S. P.	Sk.	. .	. .	28.5	3.5	38.0	16.0	. .	. .	. .	11 38.65	− 7.08	. .	+15.83	1 11 47.40	+ 4.70
	43	η Bootis	Sk.	14.9	17.6	19.2	25.6	27.8	29.9	36.5	38.0	40.8	48 27.81	− 0.72	+15.83	+15.83	13 48 42.92	− 0.05
	44	α Bootis	Sk.	28.4	31.4	33.0	39.4	41.6	43.8	50.4	51.9	54.7	9 41.62	− 0.72	+15.82	+15.83	14 9 56.73	+ 0.01
	45	XIV, 12	Sk.	. .	16.5	18.6	. .	. .	. .	39.0	41.2	. .	20 28.84	− 0.98	. .	+15.83	14 20 43.69	− 1.84
	46	B. A. C. 4863	Sk.	5.3	8.6	10.5	18.1	20.7	23.3	31.2	33.0	36.3	37 20.78	− 0.65	. .	+15.83	14 37 35.96	− 2.26
	47	B. A. C. 4885	Sk.	15.0	18.5	20.6	29.0	31.8	34.5	42.9	45.0	48.6	40 31.77	− 0.62	. .	+15.83	14 40 46.98	− 2.43
	48	B. A. C. 4905	Sk.	8.5	11.3	13.0	19.3	21.6	23.8	30.3	31.8	34.6	45 21.58	− 0.72	. .	+15.83	14 45 36.69	− 1.93

17. Bisections at wires II–IV.
32. Transits and bisections at wires D_1, D_2, and D_3.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	7 40	10 11.1	3.0	22.3	25.9	39	. .	610	. .	495	. .	75.1	352 17 11.0	. .	− 8.1	43 23 24.1	+ 2.0
2	310 46	13.9	10.0	8.9	4.0	39	. .	651	. .	540	. .	75.1	49 11 19.9	47.3	+ 1 8.8	100 18 49.9	+ 3.5
3	52 22	10.0	7.6	27.2	0.0	30	796	798	796	. .	. .	74.6	307 32 59.1	. .	− 1 13.7	358 38 6.6	− 1.2
4	310 34	9.5	7.3	26.0	1.8	38	. .	. .	. .	320	314	74.6	49 22 54.5	. . .	+ 1 6.1	100 30 21.8	− 0.2
5	346 4	14.2	11.8	1.6	5.2	39	. .	. .	. .	830	770	74.6	13 53 22.2	64.5	+ 14.0	64 59 57.4	− 5.3
6	340 4	8.7	6.2	26.5	29.8	33	. .	210	. .	218	. .	74.6	19 51 35.4	. .	+ 20.5	70 58 17.1	− 0.9
7	3 8	14.5	13.5	2.4	4.2	30	. .	904	. .	906	. .	74.6	356 47 6.1	. .	− 3.2	47 53 24.1	− 4.9
8	338 0	4.2	0.6	19.8	26.6	34	428	. .	. .	. .	448	74.6	21 55 49.2	. .	+ 22.9	73 2 33.3	−10.0
9	338 0	4.2	0.6	19.8	26.6	34	. .	460	. .	468	. .	74.6	21 55 49.5	. .	+ 22.9	73 2 33.6	−10.0
10	305 32	11.3	7.4	26.4	2.3	32	910	912	. .	900	890	74.6	54 23 32.0	62.0	+ 1 19.4	105 31 12.6	+ 0.1
11	316 12	9.8	8.0	26.9	1.8	37	. .	876	. .	890	. .	75.1	43 44 48.3	54.0	+ 55.3	94 52 4.8	− 1.9
12	293 12	10.2	8.8	27.8	1.5	33	. .	420	. .	458	. .	75.1	66 43 41.1	. .	+ 2 13.6	117 52 15.9	−15.6
13																	
14	237 28	5.9	5.9	23.7	28.2	38	. .	. .	. .	101	071	75.1	72 28 48.5	. .	+ 3 1.3	123 38 11.0	−16.4
15	234 12	12.8	11.7	0.1	3.7	37	. .	290	. .	300	. .	75.1	75 44 42.3	52.5	+ 3 44.1	126 54 47.6	−16.7
16	340 4	9.9	8.7	27.2	1.1	33	. .	016	. .	990	. .	75.1	19 51 33.8	53.0	+ 20.9	70 58 15.9	− 1.4
17	153 52	9.0	8.2	27.1	0.4	37	150	220	124	. .	. .	75.1	206 4 36.1	. .	+ 28.4	25 1 16.7	− 1.7
18	281 48	4.4	3.4	22.3	26.2	33	. .	. .	. .	. .	688	75.1	78 7 39.2	52.0	+ 4 29.0	129 18 29.4	−15.7
19	9 40	3.9	3.7	22.5	25.5	33	. .	. .	. .	441	393	75.1	350 15 36.0	. .	− 10.0	41 21 47.2	− 6.6
20	312 8	3.6	2.7	21.3	27.4	34	. .	046	. .	092	. .	75.1	47 47 44.8	. .	+ 1 4.0	98 55 10.0	− 0.6
21	354 26	11.2	10.4	29.8	2.3	36	. .	678	. .	648	. .	75.1	5 30 31.9	51.3	+ 5.6	56 36 58.7	− 9.2
22	350 36	9.9	9.5	27.3	1.5	39	. .	150	. .	146	. .	75.1	9 21 8.6	. .	+ 9.6	60 27 39.4	− 9.9
23	234 0	0.7	0.9	18.9	24.3	31	. .	120	. .	030	. .	75.1	65 54 56.2	51.2	+ 2 9.3	117 3 26.7	−12.9
24	358 6	10.8	9.5	28.7	1.6	33	. .	435	. .	300	. .	75.1	1 50 57.3	. .	+ 1.9	52 57 20.4	−10.0
25	300 58	4.5	2.8	20.9	26.9	29	. .	. .	. .	320	364	75.1	58 56 32.7	. .	+ 1 36.2	110 4 30.1	−12.6
26	342 24	5.9	5.7	23.8	29.2	34	. .	912	. .	980	. .	75.1	17 32 0.8	. .	+ 18.3	68 38 40.3	−11.5
27	357 52	3.3	3.7	23.8	26.0	39	. .	090	. .	094	. .	75.1	2 5 2.4	51.0	+ 2.1	53 11 25.7	−11.7
28	340 10	9 29.0	29.1	16.8	21.9	34	. .	. .	. .	632	582	75.1	19 45 49.0	. .	+ 20.9	70 52 31.1	−12.4
29	21 6	10 11.6	10.8	29.9	2.5	36	. .	. .	. .	594	502	75.1	338 50 31.5	50.0	− 22.6	29 56 30.1	−11.3
30	6 2	5.7	4.9	24.8	27.9	39	. .	. .	. .	650	740	75.1	353 55 13.9	. .	− 6.2	45 1 28.9	−12.4
31	310 44	9.4	8.4	26.1	1.7	31	. .	920	. .	880	. .	75.1	49 11 16.7	49.9	+ 1 7.4	100 18 45.3	− 0.8
32	49 40	9 28.6	27.5	17.4	18.7	37	. .	. .	823	765	680	75.1	310 16 38.0	66.9	− 1 7.3	1 21 51.9	− 1.4
33	341 14	10 7.7	6.5	24.5	29.5	34	. .	190	. .	170	. .	75.1	18 41 49.9	. .	+ 19.3	69 48 30.4	− 1.9
34	343 54	9.7	11.2	29.1	2.0	32	. .	470	. .	480	. .	75.1	16 1 27.3	63.0	+ 16.4	67 8 4.9	+ 0.4
35	340 38	9 26.7	24.3	16.2	21.3	38	460	490	. .	. .	. .	76.2	19 18 46.4	. .	+ 19.8	70 25 27.4	
36	341 10	10 7 3	3.6	27.5	1.7	39	. .	. .	. .	065	025	76.2	18 47 6.7	67.3	+ 19.2	69 53 47.1	
37	312 42	8.7	10.1	26.9	0.7	32	. .	750	. .	762	. .	76.2	47 13 31.1	. .	+ 1 0.7	98 20 53.0	− 0.2
38	349 32	4.9	5.5	26.2	29.4	32	. .	632	. .	590	. .	76.2	10 23 26.5	69.0	+ 10.3	61 29 58.0	+ 0.4
39																	
40	349 22	9.0	9.2	28.2	1.6	33	. .	090	. .	078	. .	76.2	10 33 36.8	70.9	+ 10.4	61 40 8.4	+ 0.9
41	293 12	15.6	11.7	29.5	3.6	33	385	385	. .	. .	. .	76.2	66 43 43.6	57.9	+ 2 12.4	117 52 17.2	−15.6
42	52 22	12.0	8.5	26.9	28.9	30	665	710	730	. .	. .	76.2	307 32 59.5	. .	− 1 14.5	358 38 6.2	− 0.4
43	340 4	15.0	11.5	1.0	5.0	32	. .	765	. .	745	. .	76.2	19 51 35.2	. .	+ 20.8	70 58 17.2	0.0
44	340 54	12.3	9.5	27.5	2.5	38	. .	800	. .	765	. .	76.2	19 3 4.9	. .	+ 19.9	70 9 46.0	+ 0.7
45	283 8	23.4	19.0	7.9	10.9	39	. .	. .	. .	190	075	76.2	76 49 19.9	. .	+ 4 0.5	127 59 41.6	−15.7
46	358 20	7.8	7.0	28.1	29.3	35	880	860	. .	. .	. .	76.2	1 36 2.5	. .	+ 1.6	52 42 25.3	− 6.1
47	3 58	16.9	16.3	8.7	8.7	38	. .	280	. .	305	. .	76.2	355 59 4.8	. .	− 4.0	47 5 22.0	− 5.6
48	340 40	8.0	4.9	24.0	28.3	34	. .	645	. .	615	. .	76.2	19 15 57.1	. .	+ 20.1	70 22 38.4	− 9.1

No.	Barom.	At. Ther.
	in.	°
4	30.43	50.0
5	30.10	67.0
10	30.08	66.0
11	30.00	57.0
29	29.99	55.0
31	30.00	52.0
32	30.06	57.6
34	30.06	59.5
36	30.04	62.6
38	30.03	64.5
40	30.00	68.0
41	30.00	61.5

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
35	− 2.9	− 15 50.1	. .	− 15 53.0
36	− 2.8	+ 15 50.1	. .	+ 15 47.3

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
May 19	1	B. A. C. 4942 . .	Sk.	7.0	10.6	12.5	20.5	23.3	26.0	34.0	36.0	39.2	54 23.23	− 0.63	. .	+15.83	14 54 38.43	− 2.35
	2	B. A. C. 4980 . .	Sk.	44.3	48.0	50.5	0.0	3.0	6.0	15.3	17.5	21.5	1 2.90	− 0.58	. .	+15.83	15 1 48.15	− 2.67
	3	μ^1 Bootis	Sk.	15.5	18.6	20.7	. .	. .	. .	41.2	43.1	46.3	19 30.90	− 0.65	+15.92	+15.83	15 19 46.08	− 0.10
	4	α Coronæ Borealis .	Sk.	54.3	57.3	58.9	6.0	8.2	10.4	17.2	19.0	21.8	29 8.12	− 0.70	+15.86	+15.83	15 29 23.35	+ 0.07
	5	α Serpentis . . .	Sk.	38.3	40.8	42.3	48.6	50.6	52.6	58.9	0.5	3.0	37 50.62	− 0.77	+15.78	+15.83	15 38 5.68	+ 0.02
21	6	δ Leonis	F.	. .	. .	6.0	8.2	10.5	12.6	14.9	. .	. .	7 10.44	− 0.72	+15.68	+15.70	11 7 25.42	− 0.04
	7	δ Crateris . . .	F.	. .	. .	. .	. .	. .	. .	56.9	58.4	1.2	12 48.48	− 0.83	+15.67	+15.70	11 13 3.35	+ 0.01
	8	τ Leonis	F.	1.2	3.9	5.3	11.5	13.5	15.5	21.7	23.2	25.7	21 13.50	− 0.77	+15.70	+15.70	11 21 28.43	− 0.02
	9	ν Leonis	F.	3.6	6.2	7.8	. .	. .	. .	. .	. .	. .	30 15.91	− 0.78	+15.72	+15.70	11 30 30.83	− 0.06
	10	γ Cephei, S. P. .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	11	XI, 13	F.	54.5	57.6	59.3	6.6	8.8	11.2	18.4	20.3	23.2	43 8.88	− 0.91	. .	+15.70	11 43 23.67	− 0.85
	12	θ Virginis . . .	F.	59.9	2.5	4.0	10.0	12.2	14.3	20.4	21.9	24.4	3 12.18	− 0.80	+15.69	+15.69	13 3 27.07	− 0.04
	13	XIII, 6	F.	12.0	15.3	16.9	23.7	26.1	28.3	35.3	36.8	39.9	7 26.03	− 0.89	. .	+15.69	13 7 40.83	− 1.39
	14	Polaris, S. P. .	F.	. .	. .	. .	0.0	34.0	10.0	. .	. .	. .	11 34.67	− 5.41	. .	+15.69	13 11 44.95	+ 1.11
	15	XIII, 7	F.	6.8	10.0	11.7	19.3	21.5	24.2	31.6	33.5	36.6	14 21.69	− 0.92	. .	+15.69	13 14 36.46	− 1.44
	16	XIII, 13	F.	. .	. .	50.3	53.0	55.6	58.0	0.8	. .	. .	26 55.54	− 0.95	. .	+15.69	13 27 10.28	− 1.54
	17	XIII, 15	F.	. .	. .	. .	. .	. .	. .	34.0	35.9	38.9	28 24.53	− 0.91	. .	+15.69	13 28 39.31	− 1.52
	18	XIII, 21	F.	11.7	14.9	16.4	23.8	26.3	28.6	35.9	37.6	40.9	31 26.23	− 0.91	. .	+15.69	13 31 41.01	− 1.53
	19	B. A. C. 4643 . .	F.	. .	. .	21.0	40.2	57.8	16.0	33.5	. .	. .	45 57.70	+ 0.26	. .	+15.69	13 46 13.65	−12.73
	20	η Bootis	F.	15.0	17.8	19.3	25.7	28.0	30.2	36.6	38.0	40.8	48 27.93	− 0.72	+15.71	+15.69	13 48 42.90	− 0.07
	21	Anonymous . .	F.	. .	23.0	26.5	. .	33.0	36.4	43.0	45.5	49.5	11 29.73	− 0.59	. .	+15.69	14 11 44.83	− 2.78
	22	B. A. C. 4825 . .	F.	. .	. .	. .	. .	. .	. .	26.7	28.6	31.9	29 16.46	− 0.67	. .	+15.69	14 29 31.48	− 2.24
	23	B. A. C. 4863 . .	F.	5.5	8.8	10.6	18.2	20.8	23.4	31.2	33.0	36.2	37 20.86	− 0.66	. .	+15.69	14 37 35.89	− 2.26
	24	B. A. C. 4874 . .	F.	. .	. .	. .	43.2	47.4	51.8	0.5	3.5	9.2	38 43.14	− 0.51	. .	+15.69	14 38 58.32	− 3.56
	25	XIV, 22	F.	. .	. .	. .	1.7	4.1	6.8	11.9	13.8	17.0	42 1.66	− 0.94	. .	+15.69	14 42 16.41	− 1.93
	26	XV, 2	F.	0.2	3.2	5.0	12.2	14.6	16.9	24.0	25.8	28.8	1 14.52	− 0.90	. .	+15.69	15 1 29.31	− 1.92
	27	XV, 4	F.	31.1	34.0	35.8	42.9	45.5	48.0	54.9	56.7	59.7	10 45.40	− 0.90	. .	+15.69	15 11 0.19	− 1.96
	28	XV, 6	F.	29.7	32.7	34.4	41.3	43.8	46.0	53.1	54.5	57.5	12 43.67	− 0.89	. .	+15.69	15 12 58.47	− 1.93
	29	XV, 9	F.	22.0	24.8	26.5	32.9	35.1	37.4	43.9	45.5	48.4	18 35.17	− 0.86	. .	+15.69	15 18 50.00	− 1.89
	30	XV, 11	F.	34.9	38.1	39.9	47.5	49.9	52.3	59.8	1.7	4.9	22 49.89	− 0.93	. .	+15.69	15 23 4.65	− 2.06
	31	α Coronæ Borealis .	F.	54.5	57.4	59.2	6.0	8.3	10.7	17.4	19.1	22.0	29 8.29	− 0.70	+15.71	+15.69	15 29 23.28	− 0.02
	32	α Serpentis . . .	F.	38.4	41.0	42.5	48.7	50.7	52.8	59.0	0.5	3.0	37 50.73	− 0.76	+15.68	+15.69	15 38 5.66	+ 0.03
	33	Polaris	S.	. .	. .	. .	. .	. .	. .	1.0	7.0	56.0	11 20.13	+ 3.63	. .	+15.63	1 11 39.39	− 4.78
22	34	Polaris, S. P. . .	S.	. .	. .	. .	. .	33.5	6.0	41.0	. .	. .	11 32.40	− 8.53	. .	+15.57	1 11 39.44	− 5.02
	35	XIII, 7	S.	. .	. .	. .	. .	24.2	26.8	31.6	33.6	36.9	14 21.89	− 0.87	. .	+15.57	13 14 36.59	− 1.44
	36	α Virginis . . .	S.	7.6	10.2	11.9	18.0	20.1	22.3	28.4	30.0	32.6	18 20.12	− 0.74	+15.50	+15.57	13 18 34.95	+ 0.05
	37	38 Cassiopeæ, S. P. .	S.	10.5	3.4	58.8	. .	. .	. .	. .	. .	. .	21 35.40	− 1.13	. .	+15.57	1 21 49.84	+ 0.02
	38	XIII, 21	S.	12.0	14.9	16.7	23.9	26.4	28.8	35.9	37.8	40.7	31 26.34	− 0.86	. .	+15.57	13 31 41.05	− 1.53
	39	B. A. C. 4594 . .	S.	25.6	28.4	30.2	36.9	39.2	41.4	48.4	50.0	53.0	40 39.23	− 0.59	. .	+15.57	13 40 54.21	− 1.89
	40	B. A. C. 4643 . .	S.	. .	. .	. .	40.9	58.3	15.7	33.7	. .	. .	45 58.32	+ 0.94	. .	+15.57	13 46 14.83	−12.61
	41	50 Cassiopeæ, S. P. .	S.	. .	. .	38.1	31.5	24.7	18.1	11.9	. .	. .	52 24.92	− 1.20	. .	+15.57	1 52 39.29	+ 0.29
	42	α Draconis . . .	S.	. .	. .	37.8	42.4	47.4	52.1	57.0	. .	. .	0 47.34	− 0.17	. .	+15.57	14 1 2.74	+ 0.16
	43	α Bootis (R.). . .	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	44	B. A. C. 4825 . .	S.	1.4	4.6	6.5	14.0	16.7	19.3	27.0	28.9	32.0	29 16.71	− 0.54	. .	+15.57	14 29 31.74	− 2.24
	45	B. A. C. 4874 . .	S.	. .	. .	34.6	38.9	43.2	47.4	51.7	. .	. .	38 43.16	− 0.33	. .	+15.57	14 38 58.40	− 3.55
	46	α^2 Libræ	S.	28.9	31.6	33.0	39.5	41.6	43.8	50.0	51.8	54.4	43 41.62	− 0.76	+15.53	+15.57	14 43 56.43	+ 0.03
	47	α Coronæ Borealis .	S.	54.6	57.8	59.2	6.2	8.4	10.7	17.6	19.3	22.3	29 8.46	− 0.58	+15.42	+15.56	15 29 23.44	+ 0.14
	48	B. A. C. 5178[1]. .	S.	9.6	12.8	14.6	. .	. .	. .	35.0	37.1	40.4	34 24.92	− 0.54	. .	+15.56	15 34 39.94	− 2.28
	49	B. A. C. 5178[3]. .	S.	. .	. .	20.1	22.7	25.4	28.0	30.6	. .	. .	34 25.36	− 0.54	. .	+15.56	15 34 40.36	− 2.28
	50	ϵ Serpentis . . .	S.	. .	. .	. .	19.3	21.3	23.3	27.6	29.0	31.5	44 19.26	− 0.68	+15.51	+15.56	15 44 34.14	+ 0 05

10, 19, 41, 42, 43, 45. Bisections at sets B and D.
21. Wire A used.
35. Wire B used.
40. Bisections at set C.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	1 12	10 8.5	7.4	28.2	29.0	38	. .	620	. .	635	. .	76.2	358 45 0.5	. .	− 1.3	49 51 20.4	− 6.9
2	9 40	6.4	4.6	25.4	27.0	33	. .	130	. .	120	. .	76.2	350 15 33.9	. .	− 9.9	41 21 45.2	− 6.3
3	358 52	10.9	9.9	0.0	2.2	36	600	670	. .	. .	. .	76.2	1 4 32.2	. .	+ 1.1	52 10 54.5	− 1.1
4	343 12	9.5	5.7	25.8	27.4	39	. .	530	. .	485	. .	76.2	11 45 12.7	. .	+ 12.0	02 51 45.9	+ 0.7
5	327 52	14.0	11.5	29.8	3.5	33	. .	690	. .	690	. .	76.2	32 3 48.6	54.5	+ 36.2	83 10 46.0	− 0.1
6	342 16	7.2	5.3	25.2	0.1	36	. .	. .	. .	610	640	75.9	17 40 28.5	58.4	+ 18.2	68 47 7.9	− 0.4
7	306 53	3.9	1.4	18.5	25.2	36	. .	. .	. .	570	564	75.9	52 58 22.6	. .	+ 1 15.7	104 5 59.5	+ 0.7
8	324 36	6.6	3.2	22.5	29.2	35	. .	014	. .	020	. .	75.9	35 20 1.8	. .	+ 40.5	86 27 3.5	− 1.2
9	320 56	9 28.0	25.7	14.4	20.7	37	. .	. .	. .	968	958	75.9	39 0 39.1	. .	+ 46.4	90 7 46.7	− 0.9
10	64 4	10 9.8	6.8	26.8	29.1	31	164	. .	. .	. .	. .	75.9	295 51 5.0	. .	− 1 57.6	346 55 28.6	− 0.1
11	289 20	8.1	5.7	24.0	29.0	34	5 8	526	. .	. .	. .	75.9	70 35 55.1	. .	+ 2 41.2	121 44 57.5	−16.1
12	316 12	8.5	4.8	23.8	29.5	38	. .	048	. .	036	. .	75.9	43 44 49.4	55.0	+ 55.2	94 52 5.8	− 0.8
13	293 12	6.9	3.7	23.3	24.0	33	. .	. .	. .	710	712	75.9	66 43 41.0	. .	+ 2 13.2	117 52 15.4	−15.8
14																	
15	286 54	9 26.7	23.0	12.5	18.2	46	. .	. .	. .	914	932	75.9	73 4 53.8	. .	+ 3 7.4	124 14 22.4	−16.8
16	282 54	10 9.4	6.2	25.2	29.0	44	. .	975	. .	975	. .	75.9	77 4 36.1	. .	+ 4 6.2	128 15 3.5	−17.3
17	289 52	9.1	6.0	23.0	27.7	38	. .	. .	. .	040	032	75.9	70 34 49.1	. .	+ 2 41.7	121 43 52.0	−16.3
18	285 38	18.0	15.2	2.7	5.6	39	. .	050	. .	030	. .	75.9	71 19 13.2	. .	+ 2 49.0	122 28 23.4	−16.4
19	44 24	11.5	8.3	28.2	0.8	32	. .	350	. .	350	. .	75.9	315 31 25.6	. .	− 56.7	6 36 50.1	+ 4.9
20	340 4	9.0	5.7	27.0	1.1	33	. .	. .	. .	002	018	75.9	19 51 34.4	54.0	+ 20.9	70 58 16.5	− 0.3
21	12 56	9 29.0	26.9	17.4	19.3	33	. .	. .	. .	272	278	75.9	346 56 53.4	. .	− 13.4	38 3 1.2	− 1.5
22	358 14	10 4.2	2.5	23.0	25.9	38	. .	. .	. .	360	368	75.9	1 42 52.3	. .	+ 1.7	52 49 15.2	− 5.2
23	358 20	6.5	5.9	25.8	29.7	34	880	900	. .	. .	. .	75.9	1 36 1.5	. .	+ 1.6	52 42 24.3	− 5.7
24	22 50	3.8	1.8	22.9	24.4	35	. .	. .	. .	440	. .	75.9	337 6 7.0	. .	− 24.5	28 12 3.7	− 2.3
25	284 14	14.0	9.6	29.3	3.1	35	. .	. .	. .	702	700	75.9	75 42 18.3	51.3	+ 3 41.2	126 52 23.7	−15.2
26																	
27	290 20	1.0	26.7	15.7	21.8	35	346	366	. .	. .	. .	75.9	69 35 59.7	. .	+ 2 35.3	120 44 56.2	−13.9
28	293 16	11.4	7.4	26.8	2.3	39	. .	538	. .	540	. .	75.9	66 41 15.0	. .	+ 2 14.4	117 49 50.6	−13.7
29	300 8	15.0	10.7	29.7	4.9	35	. .	568	. .	584	. .	75.9	59 48 17.4	. .	+ 1 39.8	110 56 18.4	−13.2
30	285 54	11.4	7.0	26.1	0.7	37	. .	642	. .	680	. .	75.9	74 2 45.4	. .	+ 3 21.1	125 12 27.7	−13.6
31	348 12	6.4	3.2	24.3	26.9	39	. .	. .	. .	545	570	75.9	11 45 11.8	. .	+ 12.1	62 51 45.1	+ 0.3
32	327 52	5.0	2.0	22.1	25.5	34	140	158	. .	170	140	75.9	32 3 46.9	49.3	+ 36.5	83 10 44.6	− 1.3
33																	
34																	
35	286 54	9.4	7.1	24.7	0.2	36	. .	. .	. .	040	066	75.7	73 4 52.9	. .	+ 3 8.2	124 14 22.3	+17.0
36																	
37	71 22	6.2	4.2	21.7	25.5	32	. .	100	. .	. .	. .	75.7	288 33 15.3	53.9	− 2 51.1	339 36 45.4	− 0.4
38	238 38	1.7	2.1	18.6	24.6	39	. .	710	. .	780	. .	75.7	71 19 10.1	. .	+ 2 49.6	122 28 20.9	−16.5
39	347 22	7.0	6.6	24.5	28.5	32	. .	290	. .	350	. .	75.7	12 33 21.7	54.0	+ 12.9	63 39 55.8	− 4.3
40	44 24	10.0	8.1	26.4	28.5	32	. .	. .	516	. .	624	75.7	315 31 27.0	. .	− 56.9	6 36 51.3	+ 5.1
41	69 12	9.2	6.3	24.8	29.2	37	580	. .	. .	. .	582	75.7	290 44 42.5	53.0	− 2 32.2	341 48 31.5	+ 2.1
42	26 0	2.5	1.9	21.2	23.7	32	. .	. .	. .	634	614	75.7	333 55 22.1	. .	− 28.5	25 1 14.8	− 2.6
43	199 0	11 16.4	14.3	2.6	4.0	35	. .	. .	. .	. .	993	75.7	160 56 55.5	52.5	− 20.1	70 9 45.8	+ 1.0
44	358 14	10 . .	8.1	. .	29.4	38	. .	250	. .	075	. .	75.7	1 42 52.8	. .	+ 1.7	52 49 15.7	− 5.0
45	22 50	9 27.4	28.0	18.4	19.8	35	802	. .	. .	. .	802	75.7	337 6 6.7	52.6	− 24.6	28 12 3.3	− 2.0
46	305 32	10 6.0	4.4	22.3	28.5	33	. .	036	. .	030	. .	75.7	54 23 30.5	. .	+ 1 21.1	105 31 12.8	+ 0.2
47	348 12	5.0	4.5	23.0	27.0	39	. .	610	. .	616	. .	75.7	11 45 11.6	. .	+ 12.1	62 51 44.9	+ 0.3
48	358 6	8.0	8.0	27.3	0.2	38	330	. .	. .	. .	260	75.7	1 50 55.3	. .	+ 1.9	52 57 18.4	− 8.9
49	358 6	8.0	8.0	27.3	0.2	38	. .	558	. .	700	. .	75.7	1 51 0.1	. .	+ 1.9	52 57 23.2	− 8.9
50	325 54	7.8	5.8	23.9	29.0	33	. .	. .	. .	400	436	75.7	34 1 38.7	. .	+ 39.4	85 8 39.3	− 1.0

No.	Barom.	At. Ther.
	in.	°
5	29.99	57.5
6	29.93	61.0
12	30.00	59.5
20	30.01	58.0
25	30.00	56.0
32	30.00	54.0
37	30.09	58.0
44	30.10	56.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
May 22	1	Polaris . . .	Sk.	. .	. .	25.0	53.5	18.0	. .	. .	. .	. .	11 17.50	. .	. .	. .		. .
26	2	Sun I, N. . . .	S.	32.8	35.3	37.0	41.5	45.9	50.3	54.6	56.3	59.0	11 45.86	— 0.51	. .	+14.98	4 12 0.33	. .
	3	Sun II, S. . . .	S.	48.8	51.4	53.6	59.8	1.9	4.1	10.6	12.3	15.0	14 1.94	— 0.51	. .	+14.98	4 14 16.41	. .
	4	Moon I. . . .	S.	57.0	59.6	1.1	7.5	9.6	11.6	18.0	19.6	22.2	10 9.58	— 0.42	. .	+14.97	13 10 24.13	+61.31
	5	η Bootis . . .	S.	15.4	18.0	19.6	26.2	28.2	30.5	37.0	38.6	41.4	48 28.32	— 0.50	+15.09	+14.97	13 48 42.79	— 0.17
	6	α Draconis . . .	S.	25.3	28.9	38.3	43.3	48.0	53.0	57.9	7.6	11.1	0 48.16	— 0.92	. .	+14.97	14 1 2.21	— 0.31
	7	α Bootis (R.) . .	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	8	θ Bootis (R.) . .	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	9	5 Ursæ Minoris . .	S.	. .	. .	. .	32.7	41.6	50.4	59.0	. .	. .	27 41.58	— 1.41	. .	+14.97	2 27 55.14	— 0.25
	10	B. A. C. 4863 . .	S.	6.0	9.2	11.1	18.9	21.4	24.0	31.8	33.6	36.8	37 21.42	— 0.59	. .	+14.97	14 37 35.80	— 2.25
	11	B. A. C. 4885 . .	S.	15.9	19.2	21.3	29.7	32.6	35.3	43.7	45.8	49.0	40 32.50	— 0.63	. .	+14.97	14 40 46.84	— 2.42
	12	B. A. C. 5157 . .	S.	. .	. .	. .	39.0	41.9	44.7	50.3	52.4	55.9	30 39.04	— 0.64	. .	+14.97	15 30 53.37	— 2.47
	13	XV, 22	S.	6.3	9.3	11.0	18.0	20.2	22.5	29.5	31.3	34.2	38 20.26	— 0.35	. .	+14.97	15 38 34.88	— 2.04
	14	ε Serpentis . . .	S.	7.3	9.9	11.4	17.6	19.8	21.8	27.8	29.4	31.9	44 19.66	— 0.45	+14.91	+14.97	15 44 34.18	— 0.06
	15	Anonymous . .	S.	. .	. .	53.0	55.4	57.6	0.2	2.3	. .	. .	50 57.70	— 0.34	. .	+14.97	15 51 12.33	— 2.10
	16	Anonymous . .	S.	. .	. .	6.8	9.1	11.4	13.7	16.3	. .	. .	51 11.46	— 0.34	. .	+14.97	15 51 26.09	— 2.10
	17	B. A. C. 5388 . .	S.	. .	. .	30.4	33.3	36.0	39.0	42.0	. .	. .	4 36.14	— 0.65	. .	+14.97	16 4 50.46	— 2.50
	18	B. A. C. 5426 . .	S.	28.4	31.0	32.6	39.0	41.2	43.4	50.0	51.5	54.1	9 41.24	— 0.50	. .	+14.97	16 9 55.71	— 2.01
	19	B. A. C. 5459 . .	S.	33.7	39.0	42.2	54.1	58.1	2.4	14.8	17.7	22.8	14 58.31	— 0.82	. .	+14.97	16 15 12.46	— 3.25
	20	α Scorpii . . .	S.	15.0	17.8	19.6	26.2	28.6	30.9	37.7	39.4	42.1	21 28.59	— 0.36	+14.96	+14.97	16 21 43.20	0.00
	21	B. A. C. 5532 . .	S.	17.5	20.1	21.6	28.0	30.0	32.2	38.4	40.0	42.6	26 30.04	— 0.48	. .	+14.97	16 26 44.53	— 1.96
	22	XVI, 18 . . .	S.	55.1	58.0	0.0	7.0	9.8	12.2	19.7	21.4	24.6	37 9.76	— 0.33	. .	+14.97	16 37 24.40	— 2.26
	23	B. A. C. 5647 . .	S.	20.5	23.0	24.8	31.0	33.2	35.3	41.6	43.2	45.9	43 33.17	— 0.48	. .	+14.97	16 43 47.66	— 1.96
	24	κ Ophiuchi . . .	S.	17.3	19.8	21.6	27.7	29.8	31.9	38.0	39.5	42.3	51 29.77	— 0.47	+14.91	+14.97	16 51 44.27	+ 0.10
	25	ϵ Ursæ Minoris . .	S.	23.0	41.9	51.9	38.4	53.7	9.2	54.9	6.5	24.3	58 53.76	— 2.21	. .	+14.97	16 59 6.52	— 0.32
	26	Polaris	Sk.	. .	. .	. .	. .	. .	. .	. .	. .	13.5	11 39.30	— 9.94	. .	+15.26	1 11 44.62	— 2.88
27	27	Sun I, S. . . .	Sk.	. .	. .	44.9	46.9	49.0	51.3	53.6	. .	. .	15 49.14	— 0.69	. .	+15.27	4 16 3.72	. .
	28	Sun II, N. . . .	Sk.	52.0	54.9	56.6	3.0	5.1	7.4	14.0	15.8	18.3	18 5.23	— 0.69	. .	+15.27	4 18 19.81	. .
	29	β Orionis . . .	Sk.	1.1	3.8	5.3	11.4	13.7	15.6	21.9	23.2	26.2	8 13.58	— 0.62	+15.26	+15.27	5 8 28.23	+ 0.01
	30	β Tauri	Sk.	50.4	53.2	54.9	. .	. .	. .	13.6	15.3	18.2	18 4.27	— 0.71	+15.29	+15.27	5 18 18.83	— 0.04
	31	Venus I, S. . .	Sk.	2.6	5.6	7.0	. .	. .	. .	25.4	27.0	30.0	59 16.27	— 0.70	. .	+15.27	5 59 30.84	+ 0.42
	32	Venus II, N. . .	Sk.	. .	. .	12.5	14.8	17.0	19.3	21.6	. .	. .	59 17.04	— 0.70	. .	+15.27	5 59 31.61	— 0.35
	33	β Corvi	Sk.	19.5	22.3	23.9	30.6	32.9	35.1	41.7	43.4	46.0	27 32.82	— 0.56	+15.12	+15.28	12 27 47.54	+ 0.12
	34	12 Canum Venat. .	Sk.	. .	. .	52.2	55.0	57.7	0.5	5.6	7.7	11.0	49 55.10	— 0.72	+15.40	+15.28	12 50 9.66	— 0.12
	35	Polaris, S. P. . .	Sk.	. .	. .	. .	. .	. .	. .	43.5	35.5	49.0	11 24.47	+ 7.37	. .	+15.28	1 11 47.12	— 0.79
	36	XIII, 8	Sk.	7.3	10.3	12.0	18.7	21.0	23.4	30.0	31.8	34.5	15 21.00	— 0.55	. .	+15.28	13 15 35.73	— 1.40
	37	XIII, 9	Sk.	13.9	17.0	18.8	26.3	28.6	31.0	38.6	40.2	43.4	17 28.64	— 0.54	. .	+15.28	13 17 43.38	— 1.43
	38	XIII, 13 . . .	Sk.	. .	. .	50.3	53.0	55.6	58.2	0.8	. .	. .	26 55.58	— 0.53	. .	+15.28	13 27 10.33	— 1.51
	39	XIII, 18 . . .	Sk.	. .	. .	47.2	49.6	52.0	54.0	56.5	. .	. .	29 51.86	— 0.55	. .	+15.28	13 30 6.59	— 1.49
	40	η Ursæ Majoris (R.)	Sk.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	41	Moon I, N. . .	Sk.	18.6	21.2	22.9	29.2	31.3	33.5	39.8	41.3	44.0	54 31.31	— 0.57	. .	+15.29	13 54 46.03	+62.49
	42	α Bootis (R.) . .	Sk.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	43	B. A. C. 4897 . .	Sk.	42.0	45.3	47.3	54.9	57.6	0.2	8.0	10.0	13.2	43 57.61	— 0.70	. .	+15.29	14 44 12.20	— 2.28
	44	XIV, 27 . . .	Sk.	16.0	19.0	20.8	27.7	30.0	32.3	39.3	41.0	43.9	49 30.00	— 0.55	. .	+15.29	14 49 44.74	— 1.80
	45	B. A. C. 4980 . .	Sk.	45.0	48.9	51.4	0.7	3.7	6.7	16.0	18.3	22.2	1 3.66	— 0.76	. .	+15.29	15 1 18.19	— 2.65
	46	B. A. C. 5001 . .	Sk.	9.3	12.3	14.0	21.0	23.6	25.9	32.9	34.6	37.6	5 23.47	— 0.67	. .	+15.29	15 5 38.09	— 2.13
	47	XV, 4	Sk.	31.0	34.0	35.8	43.0	45.5	48.0	55.0	56.7	59.8	10 45.42	— 0.54	. .	+15.29	15 11 0.17	— 2.00
	48	μ^1 Bootis	Sk.	16.0	19.1	21.0	29.0	31.6	34.2	41.9	43.8	47.0	19 31.51	— 0.70	+15.38	+15.29	15 19 46.10	— 0.10
	49	XV, 14	Sk.	. .	. .	. .	. .	. .	57.9	3.1	5.2	8.4	25 52.66	— 0.53	. .	+15.29	15 26 7.42	— 2.19
	50	XV, 19	Sk.	26.1	29.2	30.9	38.2	40.6	42.9	50.0	51.8	54.8	33 40.50	— 0.54	. .	+15.29	15 33 55.25	— 2.09

9, 16, 17, 26, 35, 38, 41. Bisections at sets B and D.
25. Bisections at set C.
38. Wire B used.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	49 40	10 3.8	1.7	20.5	21.8	37	640	600	. .	. .	. .	75.7	310 16 38.2	68.3	− 1 6.6	1 21 52.8	− 1.2
2	342 30	9.7	9.7	25.7	1.2	36	184	190	. .	. .	. .	74.6	17 26 21.7	76.0	+ 17.3	68 33 0.2	. .
3	341 58	7.9	6.3	23.4	29.2	34	. .	. .	. .	756	738	74.6	17 57 58.4	. .	+ 17.8	69 4 37.4	. .
4	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .		. .	. .		. .
5	340 4	12.0	10.8	26.2	0.7	33	. .	030	. .	950	. .	74.6	19 51 34.1	59.2	+ 20.6	70 58 15.9	− 0.2
6	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .		58.1	. .		. .
7	199 0	10.0	9.7	24.7	27.2	38	. .	408	488	486	. .	74.6	160 56 55.6	. .	− 19.8	70 9 45.4	+ 1.2
8	166 24	17.5	16.0	2.8	5.7	35	. .	000	936	968	. .	74.6	193 32 9.6	. .	+ 13.8	37 33 57.8	− 0.9
9	37 18	9.2	7.0	24.9	27.8	38	. .	. .	. .	. .	710	74.6	322 38 59.3	. .	− 43.8	13 44 36.7	− 1.2
10	358 20	6.6	6.3	24.1	26.7	35	. .	130	. .	058	. .	74.6	1 36 2.4	. .	+ 1.6	52 42 25.2	− 4.5
11	3 56	15.3	15.6	3.2	5.0	30	. .	. .	. .	618	700	74.6	355 59 4.0	56.2	− 4.0	47 5 21.2	− 3.8
12	4 38	6.7	10.2	23.7	28.3	37	. .	. .	. .	473	513	74.6	355 18 41.1	. .	− 4.7	46 24 57.6	− 7.0
13	293 24	14.5	14.3	0.2	4.3	32	. .	507	. .	465	. .	74.6	66 31 29 5	55.6	+ 2 11.8	117 40 2.5	−13.2
14	325 54	11.5	10.1	26.8	1.8	33	. .	253	. .	223	. .	74.6	34 1 37.9	. .	+ 38.9	85 8 38.0	− 1.8
15	291 28	9.4	8.1	24.5	28.5	37	. .	. .	. .	604	. .	74.6	68 28 42.4	. .	+ 2 25.2	119 37 28.8	−12.8
16	291 28	9.4	8.1	24.5	28.5	35	. .	. .	. .	800	. .	74.6	68 28 14.8	. .	+ 2 25.1	119 37 1.1	−12.8
17	6 18	10.2	8.9	26.2	0.0	34	. .	322	. .	502	. .	74.6	353 37 54.6	54.8	− 6.4	44 44 9.4	− 9.0
18	340 10	8.0	6.4	23.1	28.1	31	. .	112	. .	026	. .	74.6	19 45 47.1	. .	+ 20.7	70 52 29.0	−10.8
19	21 6	15.1	14.1	1.6	3.2	36	. .	374	. .	268	. .	74.6	338 50 29.1	. .	− 22.4	29 56 27.9	− 8.8
20	294 56	15.8	15.0	0.8	5.5	37	. .	550	. .	420	. .	74.6	65 0 47.0	54.0	+ 2 3.3	116 9 11.5	− 0.2
21	332 48	3.7	5.0	21.5	26.5	33	. .	960	. .	894	. .	74.6	27 7 42.7	. .	+ 29.6	78 14 33.5	−11.4
22	287 30	10.2	10.4	26.3	0.3	40	. .	770	. .	600	. .	74.6	72 27 31.0	. .	+ 3 0.8	123 36 53.0	−10.6
23	334 32	8.7	8.4	23.5	29.0	36	. .	370	. .	336	. .	74.6	25 24 23.0	. .	+ 27.5	76 31 11.7	−11.7
24	330 38	5.4	5.8	22.4	28.0	58	. .	570	. .	624	. .	74.6	29 18 55.4	. .	+ 32.5	80 25 49.1	+ 0.2
25	43 16	16.1	15.0	3.7	4.9	35	. .	428	. .	410	. .	74.6	316 40 16.2	53.5	− 54.5	7 45 42.9	− 0.1
26	49 40	4.6	4.5	25.4	25.1	37	. .	. .	. .	. .	430	75.4	310 16 41.2	65.1	− 1 6.8	1 21 55.6	+ 1.0
27	342 8	10.0	9.1	28.7	1.0	34	010	340	. .	. .	. .	75.4	17 47 50.9	. .	+ 18.0	68 54 30.1	. .
28	342 40	1.8	1.4	18.6	26.6	36	. .	. .	. .	038	028	75.4	17 16 14.4	72.3	+ 17.4	68 22 53.0	. .
29	312 42	11.7	11.6	0.0	2.6	32	. .	574	. .	534	. .	75.4	47 13 29.6	. .	+ 1 0.6	98 20 51.4	− 0.3
30	349 32	12.1	11.8	28.9	1.8	32	. .	320	. .	275	. .	75.4	10 23 25.6	71.5	+ 10.3	61 29 57.1	− 0.8
31	345 42	11.8	10.8	29.2	0.6	32	971	021	. .	. .	. .	75.4	14 13 35.5	73.9	+ 14.2	65 20 10.9	. .
32	345 42	11.8	10.8	29.2	0.6	32	. .	. .	. .	127	031	75.4	14 13 22.2	. .	+ 14.1	65 19 57.5	. .
33	298 22	18.1	14.2	1.6	6.0	34	. .	652	. .	718	. .	74.8	61 34 5.0	. .	+ 1 44.5	112 42 10.7	− 1.2
34	0 2	17.5	15.8	4.4	5.0	32	. .	. .	. .	833	810	74.8	359 53 38.1	63.5	− 0.1	50 59 59.2	− 0.3
35	52 22	16.3	13.5	3.2	3.9	30	. .	. .	450	450	630	74.8	307 32 58.2	. .	− 1 14.0	358 38 5.4	+ 0.2
36	295 54	20.6	17.8	5.0	7.8	37	. .	205	. .	162	. .	74.8	64 2 46.1	. .	+ 1 56.5	115 11 3.8	−15.6
37	287 28	25.4	23.4	11.7	13.8	37	. .	070	. .	044	. .	74.8	72 28 49.9	. .	+ 2 58.4	123 38 9.5	−17.3
38	282 54	21.7	19.5	7.5	9.4	34	. .	. .	. .	387	370	74.8	77 4 38.4	. .	+ 4 3.1	128 15 2.7	−18.0
39	294 4	22.5	19.6	7.2	10.3	34	. .	. .	. .	579	540	74.8	65 52 8.2	. .	+ 2 6.6	117 0 36.0	−15.9
40	168 54	26.3	24.3	11.1	12.4	36	. .	830	. .	. .	900	74.8	191 2 46.5	. .	+ 11.1	40 3 23.6	− 0.7
41	309 12	19.5	16.7	3.9	8.9	36	200	. .	425	. .	665	74.8	50 44 34.1	. .	+ 1 9.8	101 52 5.1	. .
42	199 0	17.9	12.8	1.5	2.1	38	070	020	. .	. .	010	74.8	160 56 54.7	. .	− 19.7	70 9 46.2	+ 2.2
43	359 22	17.4	15.7	3.6	4.8	33	. .	. .	. .	535	458	74.8	0 33 48.1	. .	+ 0.6	51 40 9.9	− 4.5
44	292 26	24.4	19.9	7.0	11.0	35	. .	400	. .	338	. .	74.8	67 30 21.1	58.4	+ 2 17.5	118 38 59.8	−14.9
45	9 40	12.9	12.3	1.3	1.0	32	. .	760	. .	730	. .	74.8	350 15 32.7	. .	− 9.8	41 21 44.1	− 4.1
46	350 46	25.5	24.5	11.5	14.8	38	075	080	. .	. .	. .	74.8	9 11 6.2	. .	+ 9.3	60 17 36.7	− 7.0
47	290 20	18.5	14.3	1.4	4.6	34	. .	722	. .	695	. .	74.8	69 36 5.0	. .	+ 2 33.1	120 44 59.3	−14.4
48	358 52	15.3	13.7	2.0	3.4	36	. .	398	. .	450	. .	74.8	1 4 30.7	. .	+ 1.1	52 10 53.0	− 0.6
49	282 12	20.4	18.3	5.5	6.6	37	. .	. .	. .	445	495	74.8	77 44 50.5	. .	+ 4 18.1	128 55 29.8	−14.3
50	259 40	15.3	13.6	29.0	1.7	40	. .	472	. .	459	. .	74.8	70 17 30.9	. .	+ 2 39.0	121 26 31.1	−13.6

No.	Barom.	At. Ther.
	in.	°
1	30.17	60.0
2	29.83	72.0
5	29.97	63.0
11	29.99	60.0
25	30.00	57.0
26	30.13	61.2
28	30.13	67.4
30	30.13	67.5
31	30.11	70.0
34	30.09	66.3

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
2	− 2.6	+ 15 48.6	. .	+ 15 46.0
3	− 2.6	− 15 48.6	. .	− 15 51.2
27	− 2.6	− 15 48.5	. .	− 15 51.1
28	− 2.5	+ 15 48.5	. .	+ 15 46.0
31	− 1.4	− 6.7	. .	− 8.1
32	− 1.4	+ 6.7	0.0	+ 5.3
41	−41 56.6	+ 14 50.7	. .	− 27 5.9

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
May 27	1	α Serpentis . . .	Sk.	38.3	41.3	42.9	49.0	51.0	53.0	59.3	0.8	3.4	38 51.00	− 0.61	+15.30	+15.29	15 39 5.68	+ 0.01
	2	B. A. C. 5249 . .	Sk.	7.2	12.8	16.0	29.7	34.0	38.6	52.0	55.4	0.9	44 34.07	− 0.90	. .	+15.29	15 44 48.46	− 3.60
	3	B. A. C. 5319 . .	Sk.	46.6	49.7	51.5	58.8	1.3	3.7	11.0	12.8	16.0	56 1.27	− 0.68	. .	+15.29	15 56 15.88	− 2.22
	4	XVI, 1	Sk.	0.7	3.5	5.3	12.0	14.5	16.7	23.4	25.0	27.9	0 14.33	− 0.55	. .	+15.29	16 0 29.07	− 2.00
	5	δ Ophiuchi . . .	Sk.	19.7	22.3	23.7	30.0	31.9	33.9	40.1	41.7	44.2	7 31.94	− 0.59	+15.23	+15.29	16 7 46.64	+ 0.08
	6	Polaris. . . .	E.	. .	. .	. .	. .	. .	. .	22.0	25.0	12.0	11 38.47	− 8.54	. .	+15.04	1 11 44.97	− 3.35
	7	α Arietis . . .	E.	36.1	38.9	40.6	47.2	49.5	51.7	58.2	0.1	2.8	59 49.46	− 0.65	+14.98	+15.04	2 0 3.85	+ 0.07
	8	α Ceti.	E.	14.5	17.0	18.6	24.6	26.7	28.8	35.0	36.5	39.0	55 26.74	− 0.62	+14.03	+15.04	2 55 41.16	+ 0.13
28	9	Sun I, N. . . .	E.	39.7	42.2	43.9	50.4	52.5	54.9	1.5	3.0	5.9	19 52.67	− 0.64	. .	+15.04	4 20 7.07	. .
	10	Sun II, S. . . .	E.	55.8	55.5	0.2	6.8	8.9	11.2	17.8	19.4	22.0	22 8.96	− 0.64	. .	+15.04	4 22 23.36	. .
	11	α Orionis. . . .	E.	53.7	56.3	57.7	4.0	6.0	8.0	14.3	15.8	18.4	48 6.02	− 0.62	+14.98	+15.04	5 48 20.44	+ 0.03
	12	Venus I, S. . .	E.	23.7	26.8	28.3	35.0	37.4	39.7	46.4	48.0	50.9	4 37.36	− 0.65	. .	+15.04	6 4 51.75	+ 0.42
	13	Venus, N. . . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	14	γ Geminorum . .	E.	58.2	1.0	2.6	8.9	11.0	13.1	19.6	21.2	23.8	30 11.04	− 0.64	+15.05	+15.04	6 30 25.44	− 0.04
	15	α Canis Majoris. .	E.	7.8	10.5	12.0	18.4	20.5	22.6	29.0	30.5	33.0	39 20.58	− 0.61	+14.87	+15.04	6 39 35.01	+ 0.09
	16	α^2 Geminorum .	E.	4.3	7.4	9.2	16.5	19.0	21.3	28.4	30.4	33.3	26 18.87	− 0.67	+14.96	+15.03	7 26 33.23	+ 0.31
	17	α Canis Minoris .	E.	15.3	17.8	19.4	23.5	27.7	31.7	35.8	37.3	39.9	32 27.60	− 0.62	+14.94	+15.03	7 32 42.01	− 0.07
	18	β Geminorum . .	E.	7.7	10.6	12.4	19.3	21.6	24.0	30.9	32.6	35.5	37 21.62	− 0.66	+15.00	+15.03	7 37 35.99	0.00
	19	ν Leonis	E.	4.0	6.7	8.3	14.3	16.3	18.5	24.5	26.0	28.7	30 16.37	− 0.66	+15.08	+15.03	11 30 30.74	− 0.08
	20	β Leonis	E.	12.0	14.6	16.2	22.5	24.6	26.7	33.1	34.7	37.3	42 24.63	− 0.69	+15.08	+15.03	11 42 38.97	− 0.07
	21	o Virginis . . .	E.	. .	. .	29.9	32.0	34.0	36.1	38.2	. .	. .	58 34.04	− 0.68	+15.25	+15.03	11 58 48.41	− 0.22
	22	4 Draconis (R.) .	E.	6.3	23.8	44.5	54.5	5.0	14.8	24.5	44.9	52.7	6 4.56	+ 1.97	. .	+15.03	12 6 21.50	− 0.32
	23	η Virginis (R.) .	E.	. .	. .	9.6	11.5	13.6	15.7	17.7	. .	. .	13 13.62	+ 0.07	. .	+15.03	12 13 28.72	− 0.07
	24	12 Canum Venat. .	E.	39.7	43.1	45.2	52.8	55.5	58.0	6.0	8.0	11.3	49 55.51	− 0.77	+15.03	+15.02	12 50 9.76	− 0.01
	25	θ Virginis . . .	E.	0.3	2.9	4.6	10.5	12.7	14.8	20.9	22.5	25.0	3 12.69	− 0.65	+14.99	+15.02	13 3 27.06	− 0.01
	26	Polaris, S. P. .	E.	. .	. .	12.0	48.0	23.0	56.6	32.0	. .	. .	11 22.20	+ 8.80	. .	+15.02	1 11 46.02	− 2.73
	27	α Virginis (R.) .	E.	7.4	10.0	11.6	17.9	19.9	22.0	28.1	29.6	32.0	18 19.83	− 0.02	. .	+15.02	13 18 34.83	− 0.06
	28	XIII, 14 . . .	E.	20.0	23.2	25.2	32.6	35.3	37.8	45.5	47.4	50.7	27 35.30	− 0.63	. .	+15.02	13 27 49.69	− 1.50
	29	XIII, 16 . . .	E.	24.8	28.3	30.3	38.0	40.8	43.6	51.5	53.5	56.9	29 40.86	− 0.62	. .	+15.02	13 29 55.26	− 1.54
	30	XIII, 19 . . .	E.	. .	. .	1.7	3.9	6.1	8.4	10.7	. .	. .	31 6.16	− 0.63	. .	+15.02	13 31 20.55	− 1.45
	31	B. A. C. 4874 . .	E.	. .	. .	35.9	40.4	44.8	49.0	53.4	. .	. .	38 44.70	− 0.98	. .	+15.02	14 38 58.74	− 3.47
	32	Moon I, N. . .	E.	55.0	57.7	59.3	5.8	8.0	10.3	16.7	18.4	21.1	41 8.03	− 0.64	. .	+15.02	14 41 22.41	+64.35
	33	B. A. C. 4905 . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	34	β Bootis	E.	43.8	47.3	49.3	57.4	0.1	2.8	11.0	13.0	16.2	57 0.10	− 0.78	. .	+15.02	14 57 14.34	− 0.02
	35	B. A. C. 4980 . .	E.	. .	. .	57.8	0.9	3.9	7.0	10.0	. .	. .	1 3.92	− 0.83	. .	+15.02	15 1 18.11	− 2.65
	36	XV, 3	E.	. .	. .	13.5	15.7	17.9	20.2	22.5	. .	. .	2 17.96	− 0.63	. .	+15.02	15 2 32.35	− 1.90
	37	B. A. C. 5001 . .	E.	. .	. .	. .	. .	. .	. .	33.0	34.8	37.8	5 23.62	− 0.73	. .	+15.02	15 5 37.91	− 2.13
	38	XV, 5	E.	. .	. .	13.0	15.4	17.9	20.4	22.8	. .	. .	11 17.90	− 0.62	. .	+15.02	15 11 32.30	− 2.04
	39	XV, 7	E.	. .	. .	5.7	8.2	10.6	13.3	16.0	. .	. .	13 10.76	− 0.62	. .	+15.02	15 13 25.16	− 2.12
	40	B. A. C. 5071 . .	E.	. .	. .	5.2	8.0	11.6	14.9	18.6	. .	. .	16 11.66	− 0.86	. .	+15.02	15 16 25.82	− 2.84
	41	XV, 11	E.	. .	. .	45.3	48.0	50.6	52.8	55.5	. .	. .	22 50.44	− 0.62	. .	+15.02	15 23 4.84	− 2.12
	42	XV, 16	E.	16.5	19.6	21.4	28.0	30.3	32.7	39.7	41.5	44.3	29 30.44	− 0.63	. .	+15.02	15 29 44.83	− 2.03
	43	XV, 18	E.	17.5	20.9	22.7	30.8	33.4	36.3	44.0	46.0	49.4	32 33.44	− 0.62	. .	+15.02	15 32 47.84	− 2.24
	44	α Serpentis . . .	E.	39.0	41.6	43.0	49.2	51.3	53.4	59.6	1.0	3.7	37 51.31	− 0.67	+15.07	+15.02	15 38 5.66	− 0.02
	45	ε Serpentis . . .	E.	7.5	10.0	11.6	17.5	19.6	21.7	27.9	29.5	32.0	44 19.70	− 0.67	+15.11	+15.02	15 44 34.05	− 0.11
	46	B. A. C. 5271 . .	E.	. .	. .	1.8	4.7	7.5	10.3	13.2	. .	. .	48 7.50	− 0.79	. .	+15.02	15 48 21.73	− 2.45
	47	XV, 25	E.	. .	. .	11.6	14.0	16.5	18.6	21.0	. .	. .	49 16.31	− 0.62	. .	+15.02	15 49 30.74	− 2.12
	48	XV, 27	E.	58.0	0.8	2.5	9.4	11.5	13.8	20.9	22.6	25.4	53 11.66	− 0.63	. .	+15.02	15 53 26.05	− 2.08
	49	B. A. C. 5348 . .	E.	57.0	2.0	5.0	17.0	20.9	24.8	36.7	39.7	44.5	59 20.84	− 0.94	. .	+15.02	15 59 34.92	− 3.20
	50	B. A. C. 5385 . .	E.	54.5	57.7	59.7	7.4	10.0	12.4	20.2	22.0	25.0	4 9.88	− 0.75	. .	+15.02	16 4 24.15	− 2.28

6. Transits over set D; bisections at D_2 and D_3.
13. Telescope micrometer reading decreased one revolution in reduction.
22, 41, 46. Bisections at sets B and D.
39, 40. Bisections at wires V and VI.
43. Wire B used.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us err
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	327 52	10 15.2	13.4	1.0	2.6	33	. .	. .	. .	630	670	74.8	32 3 47.8	. .	+ 36.0	83 10 45.0	— 0.1
2	24 2	17.6	15.7	5.8	4.5	37	. .	295	. .	305	. .	74.8	335 54 46.8	. .	— 25.7	27 0 42.3	— 5.9
3	354 44	16.0	14.6	1.6	3.4	36	. .	735	. .	742	. .	74.8	5 12 35.7	. .	+ 5.2	56 19 2.1	— 9.1
4	295 6	20.0	17.5	4.5	6.8	38	. .	235	. .	142	. .	74.8	64 51 0.8	. .	+ 2 2.0	115 59 24.0	—12.4
5	317 42	18.3	16.1	2.4	5.4	38	405	388	. .	. .	. .	74.8	42 15 2.2	57.2	+ 52.3	93 22 15.7	+ 0.1
6	49 40	14.3	12.9	3.7	3.8	36	. .	. .	. .	815	650	73.4	310 16 35.7	72.0	— 1 6.0	1 21 50.9	— 4.0
7	343 54	18.2	18.8	6.8	6.4	32	. .	015	. .	965	. .	73.4	16 1 25.2	. .	+ 16.0	67 8 2.4	— 1.7
8	324 38	20.2	21.0	8.5	10.0	31	. .	060	. .	970	. .	73.4	35 17 12.5	. .	+ 39.1	86 24 12.8	— 4.4
9	342 50	9.8	8.2	24.6	28.8	36	875	835	. .	. .	. .	73.4	17 6 29.5	84.5	+ 16.8	68 13 7.5	. .
10	342 18	2.2	2.6	18.5	22.8	35	. .	. .	. .	640	630	73.4	17 38 5.6	. .	+ 17.4	68 44 44.2	. .
11	328 26	23.0	25.2	9.0	11.5	34	. .	530	. .	455	. .	73.4	31 30 8.0	. .	+ 33.4	82 37 2.6	+ 1.6
12	345 44	18.3	18.8	4.9	7.4	33	785	. .	. .	. .	755	73.4	14 11 52.5	. .	+ 13.7	65 18 27.4	. .
13	345 44	18.3	18.8	4.9	7.4	34	. .	020	. .	980	. .	73.4	14 11 40.5	. .	+ 13.7	65 18 15.4	. .
14	337 34	21.5	21.9	5.7	10.1	37	. .	585	. .	515	. .	73.4	22 22 52.5	. .	+ 22.3	73 29 36.0	+ 0.1
15	304 30	17.3	18.9	3.0	5.8	30	. .	590	. .	500	. .	73.4	55 25 1.6	. .	+ 1 18.5	106 32 41.3	— 1.5
16	353 12	16.8	16.0	2.7	3.7	32	. .	860	. .	805	. .	73.4	6 43 35.4	. .	+ 6.4	57 50 3.0	— 1.8
17	326 36	23.2	25.8	9.5	12.5	34	. .	840	. .	800	. .	73.4	33 20 13.6	. .	+ 35.3	84 27 10.1	— 1.2
18	349 22	13.6	15.8	0.5	3.3	32	. .	995	. .	960	. .	73.4	10 33 36.1	91.5	+ 10.0	61 40 7.3	— 0.4
19	320 56	11 1.7	29.8	15.2	18.5	36	. .	220	. .	160	. .	72.7	39 0 40.0	. .	+ 44.9	90 7 46.1	— 1.2
20	336 20	10 24.4	23.0	7.5	11.3	36	. .	680	. .	650	. .	72.7	23 36 40.1	. .	+ 24.2	74 43 25.5	+ 0.1
21	330 28	11 5.0	8.0	18.5	22.7	30	. .	. .	. .	155	115	72.7	29 27 12.5	. .	+ 31.4	80 34 5.1	+ 0.3
22	140 32	10 17.0	17.3	2.9	5.3	37	635	. .	. .	. .	620	72.7	219 24 48.4	75.0	+ 45.6	11 40 47.2	— 1.7
23	218 46	11 4.0	2.2	17.3	17.2	29	. .	585	. .	520	. .	72.7	141 8 59.7	. .	— 44.8	89 58 6.2	+ 0.3
24	0 2	10 21.8	20.4	6.9	7.7	32	. .	. .	. .	785	750	72.7	359 53 38.8	. .	— 0.1	50 59 59.9	+ 0.5
25	316 12	20.3	18.9	3.8	7.7	37	. .	640	. .	620	. .	72.7	43 44 50.9	. .	+ 53.4	94 52 5.5	— 0.8
26	52 22	20.4	18.7	5.3	5.4	30	040	. .	060	. .	030	72.7	307 32 54.3	. .	— 1 12.6	358 38 2.9	— 2.1
27	229 18	11 3.2	0.5	16.8	17.7	29	. .	750	. .	695	. .	72.7	130 37 1.8	. .	— 1 5.1	100 30 24.5	+ 2.7
28	284 12	10 24.5	22.5	7.3	10.7	37	470	450	. .	. .	. .	72.7	75 44 51.1	. .	+ 3 36.4	126 54 48.7	—17.8
29	280 52	22.1	19.2	4.3	7.7	35	. .	945	. .	905	. .	72.7	79 4 25.2	. .	+ 4 41.2	130 15 27.6	—17.9
30	298 2	19.8	19.2	3.8	7.7	38	. .	. .	. .	700	660	72.7	61 55 7.1	. .	+ 1 44.5	113 3 12.8	—15.1
31	22 50	25.3	23.7	9.8	9.8	34	130	200	. .	. .	. .	72.7	337 6 3.0	. .	— 23.8	28 12 0.4	— 0.4
32	304 4	19.7	17.8	3.7	8.2	39	600	660	750	860	020	72.7	55 53 23.3	. .	+ 1 23.0	107 1 7.5	. .
33	340 40	21.7	19.7	4.3	7.8	33	. .	. .	. .	920	900	72.7	19 15 55.2	. .	+ 19.7	70 22 36.1	— 7.6
34	1 56	24.2	23.3	8.0	9.7	35	740	710	. .	. .	. .	72.7	358 0 25.5	68.0	— 2.0	49 6 44.7	— 1.0
35	9 40	25.6	25.3	10.5	12.0	32	. .	. .	. .	010	970	72.7	350 15 31.2	. .	— 9.7	41 21 42.7	— 3.9
36	297 34	26.5	25.7	9.4	13.0	34	. .	. .	. .	800	760	72.7	62 22 13.4	. .	+ 1 47.4	113 30 22.0	—14.1
37	350 46	28.7	24.8	10.3	13.2	38	. .	. .	. .	160	140	72.7	9 11 6.1	. .	+ 9.1	60 17 36.4	— 6.8
38	297 32	23.3	22.1	7.1	10.0	38	. .	. .	. .	600	560	72.7	72 25 8.4	. .	+ 2 56.1	123 34 25.7	—14.7
39	283 22	25.2	23.5	8.2	12.1	40	. .	. .	. .	490	460	72.7	76 35 39.1	. .	+ 3 52.1	127 45 52.4	—15.0
40	13 26	26.7	27.3	11.5	12.0	30	. .	. .	. .	480	415	72.7	346 29 8.1	. .	— 13.6	37 35 15.7	— 4.5
41	285 54	25.6	25.6	9.8	13.2	37	485	. .	. .	. .	465	72.7	74 2 54.4	. .	+ 3 14.9	125 12 30.5	—14.4
42	294 0	20.5	17.8	4.5	6.5	30	. .	470	. .	450	. .	72.7	65 55 0.6	. .	+ 2 5.8	117 3 27.6	—13.6
43	281 34	24.3	20.8	4.8	7.3	30	. .	795	. .	695	. .	72.7	78 23 40.2	. .	+ 4 28.0	129 34 29.4	—14.2
44	327 52	21.0	20.0	4.5	5.6	32	. .	490	. .	460	. .	72.7	32 3 47.4	. .	+ 35.5	83 10 44.1	— 0.9
45	325 54	20.2	19.0	2.8	4.5	33	. .	000	. .	950	. .	72.7	34 1 38.6	. .	+ 38.2	85 8 38.0	— 1.5
46	3 50	22.8	23.0	8.3	9.0	32	190	. .	. .	. .	165	72.7	356 5 30.6	. .	— 3.9	47 11 47.9	— 7.6
47	291 28	11 1.2	29.7	13.2	15.5	37	. .	. .	. .	630	580	72.7	68 29 0.3	. .	+ 2 22.7	119 37 44.2	—13.0
48	294 24	10 24.5	22.8	7.7	10.5	38	. .	270	. .	190	. .	72.7	65 33 3.6	. .	+ 2 4.0	116 41 28.8	—12.8
49	19 58	27.3	29.0	13.2	11.7	41	. .	430	. .	370	. .	72.7	339 59 56.8	. .	— 20.6	31 5 57.4	— 7.0
50	357 52	20.1	19.9	5.6	6.1	38	. .	285	. .	240	. .	72.7	2 5 1.1	. .	+ 2.1	53 11 24.4	— 9.0

No.	Barom.	At. Ther.
	in.	°
5	30.10	60.5
7	30.12	67.5
9	30.11	76.0
15	30.09	85.0
22	30.07	77.0
34	30.12	71.5

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
9	— 2.5	+ 15 48.3	. .	+ 15 45.8
10	— 2.6	— 15 48.3	. .	— 15 50.9
12	— 1.4	— 6.0	0.0	— 7.4
13	— 1.4	+ 6.0	. .	+ 4.6
32	—45 7.0	+ 14 55.6	. .	— 30 11.4

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
May 28	1	δ Ophiuchi . . .	E.	19.8	22.4	24.0	30.0	32.1	34.1	40.3	41.9	44.5	7 32.12	− 0.65	+15.12	+15.02	16 7 46.49	− 0.08
29	2	XV, 6	F.	30.0	32.9	34.5	41.6	43.9	46.4	53.2	54.9	57.7	12 43.90	− 0.44	. .	+15.01	15 12 58.47	− 1.98
	3	μ Bootis	F.	. .	. .	. .	. .	. .	. .	42.2	44.0	47.3	19 31.78	− 0.65	+15.06	+15.01	15 19 46.14	− 0.00
	4	XV, 13	F.	10.8	13.6	15.3	22.0	24.3	26.6	33.4	35.0	37.8	25 24.31	− 0.45	. .	+15.01	15 25 38.87	− 2.00
	5	Moon I, N. . .	F.	40.8	44.0	45.4	52.1	54.3	56.7	3.3	5.2	8.0	30 54.42	− 0.46	. .	+15.01	15 31 8.97	+66.71
	6	XV, 24	F.	. .	. .	41.5	43.9	46.1	48.3	50.5	. .	. .	40 46.06	− 0.45	. .	+15.01	15 41 0.62	− 2.03
	7	ε Serpentis . . .	F.	. .	. .	. .	. .	. .	. .	27.9	29.3	32.0	44 19.65	− 0.52	+15.01	+15.01	15 44 34.14	0.00
	8	δ Scorpii	F.	. .	. .	36.3	38.4	40.5	42.8	44.9	. .	. .	52 40.58	− 0.46	+15.07	+15.01	15 52 55.13	− 0.05
	9	XV, 27	F.	. .	. .	. .	11.6	13.9	16.1	20.8	22.3	25.0	53 11.53	− 0.45	. .	+15.01	15 53 26.09	− 2.10
	10	B. A. C. 5385 . .	F.	54.5	57.9	59.7	7.2	9.8	12.5	20.0	22.0	25.2	4 9.87	− 0.64	. .	+15.01	16 4 24.24	− 2.20
	11	XVI, 2	F.	. .	. .	59.3	1.4	3.6	5.9	8.0	. .	. .	6 3.64	− 0.46	. .	+15.01	16 6 18.19	− 2.06
	12	XVI, 3	F.	. .	. .	12.0	14.3	16.5	19.0	21.3	. .	. .	10 16.62	− 0.45	. .	+15.01	16 10 31.18	− 2.15
	13	B. A. C. 5479 . .	F.	10.0	12.9	14.8	19.7	22.0	24.6	27.0	29.5	. .	17 24.61	− 0.63	. .	+15.01	16 17 38.99	− 2.22
	14	B. A. C. 5480 . .	F.	. .	. .	. .	32.3	34.7	37.3	42.0	43.9	47.0	17 32.24	− 0.63	. .	+15.01	16 17 46.62	− 2.22
	15	XVI, 11	F.	. .	. .	. .	. .	24.2	27.0	32.0	33.8	36.9	25 21.89	− 0.43	. .	+15.01	16 25 36.47	− 2.32
	16	XVI, 12	F.	. .	. .	. .	. .	. .	. .	55.0	57.0	0.1	29 44.46	− 0.42	. .	+15.01	16 29 59.05	− 2.42
	17	XVI, 16	F.	. .	. .	. .	. .	. .	. .	14.6	16.6	20.0	35 5.87	− 0.45	. .	+15.01	16 35 20.43	− 2.18
	18	κ Ophiuchi . . .	F.	17.5	20.0	21.6	27.7	29.8	31.9	38.0	39.6	42.0	51 29.79	− 0.53	+14.99	+15.01	16 51 44.27	+ 0.06
	19	XVII, 1	F.	50.3	53.4	55.2	2.2	4.5	6.9	14.0	15.8	18.8	13 4.57	− 0.44	. .	+15.01	17 13 19.14	− 2.30
	20	XVII, 3	F.	. .	. .	47.1	49.3	51.4	53.6	55.9	. .	. .	15 51.46	− 0.46	. .	+15.01	17 16 6.01	− 2.13
	21	XVII, 6	F.	44.3	47.6	49.4	57.1	59.7	2.1	10.0	11.9	15.0	21 59.68	− 0.43	. .	+15.01	17 22 14.26	− 2.44
	22	XVII, 9	F.	31.2	34.0	35.8	43.0	45.5	47.8	55.0	56.7	59.6	23 45.40	− 0.44	. .	+15.01	17 23 59.97	− 2.30
	23	XVII, 11	F.	57.7	0.9	2.6	9.5	11.9	14.2	21.1	22.9	25.7	32 11.83	− 0.44	. .	+15.01	17 32 26.40	− 2.25
	24	XVII, 14	F.	32.2	35.8	37.7	46.0	48.6	51.3	59.2	1.0	4.4	37 48.47	− 0.42	. .	+15.01	17 38 3.06	− 2.54
	25	XVII, 18	F.	13.6	16.7	18.5	26.9	29.2	31.8	40.0	41.8	45.2	40 29.30	− 0.42	. .	+15.01	17 40 43.89	− 2.50
	26	δ Ursæ Minoris . .	F.	. .	. .	55.5	30.0	4.5	40.0	14.0	. .	. .	13 4.80	− 4.84	. .	+15.01	18 12 14.97	− 0.34
	27	1 Aquilæ	F.	. .	. .	4.1	6.3	8.4	10.5	12.6	. .	. .	28 8.38	− 0.49	+15.04	+15.01	18 28 22.90	+ 0.04
	28	α Lyræ	F.	12.6	15.5	17.5	25.4	28.0	30.6	38.3	40.5	43.7	32 28.01	− 0.66	+14.90	+15.01	18 32 42.36	+ 0.13
30	29	θ Virginis . . .	S.	0.2	2.8	4.3	10.4	12.4	14.4	20.5	22.2	24.7	3 12.43	− 0.35	+14.94	+14.90	13 3 26.98	− 0.08
	30	Polaris, S. P. . .	S.	48.5	. .	. .	. .	. .	. .	. .	. .	. .	11 15.10	+20.59	. .	+14.90	1 11 50.59	+ 0.11
	31	Polaris, S.P. (R.) .	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	32	δ Scorpii	S.	27.3	30.0	31.7	38.2	40.5	42.8	49.4	51.0	53.8	52 40.52	− 0.24	+14.92	+14.89	15 52 55.17	− 0.02
	33	β^1 Scorpii	S.	41.2	43.8	45.5	52.0	54.2	56.5	2.9	4.5	7.2	57 54.21	− 0.25	+14.86	+14.89	15 58 8.85	+ 0.06
	34	δ Ophiuchi . . .	S.	19.8	22.4	23.9	30.0	32.0	34.0	40.3	41.8	44.3	7 32.06	− 0.36	+14.91	+14.89	16 7 46.59	0.00
	35	τ Herculis . . .	S.	27.6	31.4	33.8	42.6	45.6	48.6	57.9	59.7	3.5	15 45.63	− 0.84	. .	+14.89	16 15 59.68	+ 0.02
	36	α Scorpii	S.	14.9	17.6	19.3	26.3	28.6	30.9	37.7	39.4	42.3	21 28.56	− 0.21	+14.89	+14.89	16 21 43.24	− 0.01
	37	Moon I, S. . . .	S.	11.6	14.5	16.5	23.3	25.5	27.9	34.8	36.5	39.5	24 25.57	− 0.21	. .	+14.89	16 24 40.25	+69.22
	38	ζ Ophiuchi . . .	S.	. .	. .	58.8	0.9	3.0	5.0	9.2	10.6	13.2	30 0.84	− 0.32	+14.83	+14.89	16 30 15.41	+ 0.06
31	39	δ Persei	E.	. .	. .	. .	42.6	45.4	48.5	51.5	56.7	0.6	33 42.46	− 0.78	. .	+14.81	3 33 56.49	+ 0.25
June 1	40	Sun I, N. . . .	E.	. .	. .	. .	. .	13.5	15.7	20.3	21.9	24.6	36 11.34	− 0.58	. .	+14.80	4 36 25.56	. .
	41	Sun II, S. . . .	E.	14.8	17.6	19.4	25.9	28.1	30.4	37.0	38.7	41.5	38 28.16	− 0.58	. .	+14.80	4 38 42.38	. .
	42	Mercury I, S. . .	E.	36.0	38.8	40.5	47.3	49.6	51.8	58.6	0.3	3.2	17 49.57	− 0.59	. .	+14.80	5 18 3.78	− 0.19
	43	Mercury, N. . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	44	ε Orionis . . .	E.	21.9	24.4	25.9	32.0	34.1	36.1	42.3	43.8	46.3	29 34.09	− 0.48	+14.92	+14.80	5 29 48.41	− 0.13
	45	α Orionis . . .	E.	. .	. .	. .	5.9	7.9	10.0	14.1	15.7	18.4	48 5.91	− 0.51	+15.00	+14.80	5 48 20.20	− 0.23
	46	μ Geminorum . .	E.	. .	. .	0.9	3.2	5.4	7.6	9.9	. .	. .	15 5.40	− 0.58	+14.87	+14.80	6 15 19.62	− 0.11
	47	Venus I, S. . .	E.	46.7	49.6	51.4	58.1	0.4	2.6	9.4	11.0	13.8	26 0.33	− 0.59	. .	+14.80	6 26 14.54	+ 0.42
	48	Venus, N. . . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	49	γ Geminorum . .	E.	. .	. .	6.8	9.0	11.0	13.2	15.4	. .	. .	30 11.08	− 0.55	+14.92	+14.80	6 30 25.33	− 0.15
	50	α Canis Majoris. .	E.	7.6	10.3	12.0	18.2	20.4	22.5	28.9	30.5	33.3	39 20.41	− 0.43	+14.86	+14.80	6 39 34.78	− 0.14

5, 12, 20. Bisections at sets B and D.
13. Wire A used.
14. Wire B used.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	317 42	10 21.2	19.0	3.8	6.0	38	. .	480	. .	435	. .	72.7	42 15 3.4	65.0	+ 51.5	93 22 16.1	+ 0.5
2	293 16	28.4	24.6	8.8	14.2	39	. .	. .	. .	104	122	71.8	66 41 19.1	68.2	+ 2 10.1	117 49 50.4	−14.3
3	358 52	20.2	18.9	4.0	6.5	36	. .	. .	. .	274	276	71.8	1 4 29.8	. .	+ 1.1	52 10 52.1	− 1.0
4	295 42	21.5	19.5	4.1	9.0	34	. .	798	. .	838	. .	71.8	64 14 7.7	. .	+ 1 56.2	115 22 25.1	−13.7
5	299 30	19.9	17.0	0.9	5.5	29	022	. .	250	. .	398	71.8	60 24 39.4	. .	+ 1 39.0	111 32 39.6	. . .
6	297 38	18.0	15.3	29.0	3.3	36	. .	. .	. .	976	002	71.8	62 18 36.2	. .	+ 1 47.0	113 26 44.4	−13.1
7	325 54	14.0	10.9	24.8	29.1	33	. .	. .	. .	438	468	71.8	34 1 38.4	. .	+ 38.1	85 8 37.7	− 1.7
8	298 48	24.3	20.5	3.2	9.3	33	. .	. .	. .	460	. .	71.8	61 7 48.0	. .	+ 1 41.8	112 15 51.0	+ 0.2
9	294 24	19.0	15.0	28.8	4.7	38	. .	. .	. .	752	748	71.8	65 33 4.0	. .	+ 2 3.3	116 41 28.5	−12.8
10	357 52	22.4	20.6	4.8	6.8	38	262	258	. .	. .	. .	71.8	2 5 0.7	. .	+ 2.1	53 11 24.0	− 8.8
11	300 0	18.2	13.7	27.1	3.2	37	. .	. .	. .	640	650	71.8	59 56 45.8	. .	+ 1 37.0	111 4 44.0	−12.2
12	293 22	23.6	21.5	4.7	10.5	39	. .	. .	. .	. .	766	71.8	66 35 25.2	. .	+ 2 9.3	117 43 55.7	−12.2
13	355 6	26.2	24.4	7.9	11.7	35	. .	. .	. .	888	808	71.8	4 47 55.1	. .	+ 4.7	55 54 21.0	− 9.6
14	355 6	26.2	24.4	7.9	11.7	39	. .	. .	. .	118	066	71.8	4 53 51.0	. .	+ 4.8	56 0 17.0	− 9.6
15	285 50	20.4	18.1	0.6	5.1	38	. .	. .	. .	216	240	71.8	74 6 57.5	. .	+ 3 15.0	125 16 33.7	−11.5
16	282 14	25.9	22.4	5.6	10.9	39	. .	. .	. .	258	254	71.8	77 43 18.4	. .	+ 4 12.4	128 53 52.0	−11.2
17	294 52	23.6	20.6	4.1	8.0	37	. .	. .	. .	052	068	71.8	65 4 42.8	67.2	+ 2 0.5	116 13 4.5	−11.1
18	330 38	23.8	21.7	4.2	9.9	37	. .	860	. .	810	. .	71.8	29 18 55.4	. .	+ 31.6	80 25 48.2	− 0.3
19	289 38	18.2	13.8	28.4	2.5	35	. .	528	. .	534	. .	71.8	70 18 13.2	. .	+ 2 36.3	121 27 10.7	− 9.0
20	299 28	24.8	20.7	5.0	8.7	32	. .	. .	. .	746	768	71.8	60 27 37.6	. .	+ 1 39.3	111 35 38.1	− 8.5
21	283 56	23.5	20.6	3.5	8.0	40	. .	598	. .	590	. .	71.8	76 1 36.4	. .	+ 3 42.7	127 11 40.3	− 8.0
22	289 38	19.5	16.0	29.6	4.3	35	. .	456	. .	444	. .	71.8	70 18 13.6	. .	+ 2 36.4	121 27 11.2	− 8.3
23	292 14	26.2	22.3	6.4	12.5	36	. .	188	. .	150	. .	71.8	67 42 31.6	. .	+ 2 17.0	118 51 9.8	− 8.1
24	280 48	27.9	24.6	8.4	3.2	38	860	856	. .	. .	. .	71.8	79 9 11.4	. .	+ 4 46.1	130 20 18.7	− 6.6
25	282 12	20.5	17.5	1.1	5.9	41	. .	374	. .	358	. .	71.8	77 45 45.5	. .	+ 4 14.6	128 56 21.3	− 6.6
26	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
27	312 44	29.4	26.8	9.4	16.5	35	. .	. .	. .	974	964	71.8	47 12 32.7	64.3	+ 1 1.3	98 19 55.2	− 0.6
28	359 42	22.4	21.4	5.4	6.7	33	. .	460	. .	468	. .	71.8	0 13 47.8	. .	+ 0.2	51 20 9.2	− 2.0
29	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
30	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
31	127 28	14.1	12.4	24.8	1.9	31	110	106	. .	. .	. .	73.0	232 27 4.6	. .	+ 1 12.4	358 38 4.2	− 0.5
32	298 48	14.1	13.6	25.6	1.0	34	. .	116	. .	996	. .	73.0	61 7 49.7	. .	+ 1 41.4	112 15 52.3	+ 1.5
33	301 36	24.1	23.0	5.5	10.5	33	. .	550	. .	482	. .	73.0	58 19 51.2	. .	+ 1 30.7	109 27 43.1	0.0
34	317 42	20.4	20.0	4.0	7.5	38	. .	468	. .	438	. .	73.0	42 15 4.0	68.8	+ 51.0	93 22 16.2	+ 0.8
35	7 40	13.2	12.7	26.5	29.6	38	. .	860	. .	786	. .	73.0	352 17 2.6	. .	− 7.6	43 23 16.2	− 0.3
36	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
37	295 24	14.7	13.9	27.1	2.2	33	. .	830	. .	880	. .	73.0	64 31 47.5	. .	+ 1 57.4	115 40 6.1	. .
38	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		68.0	. .		. .
39	8 26	22.6	25.7	9.0	9.6	37	. .	. .	. .	100	120	72.0	351 30 47.2	81.5	− 8.1	42 37 0.3	− 1.9
40	343 24	12.4	13.3	26.3	1.2	32	050	030	. .	. .	. .	72.0	16 31 17.4	. .	+ 16.0	67 37 54.6	. .
41	342 54	17.5	16.5	0.0	5.4	37	. .	. .	. .	990	900	72.0	17 2 52.9	84.0	+ 16.6	68 9 30.7	. .
42	345 46	22.8	24.8	8.8	10.0	37	995	. .	. .	. .	895	72.0	14 10 59.2	. .	+ 13.7	65 17 34.1	. .
43	345 46	22.8	24.8	8.8	10.0	37	. .	620	. .	600	. .	72.0	14 10 53.9	. .	+ 13.7	65 17 28.8	. .
44	319 46	22.0	23.7	7.3	11.0	33	. .	645	. .	630	. .	72.0	40 9 52.3	. .	+ 45.6	91 16 59.1	+ 1.0
45	328 26	19.5	20.4	3.3	6.2	34	. .	760	. .	740	. .	72.0	31 30 5.8	. .	+ 33.2	82 31 0.2	− 0.4
46	343 38	22.8	23.7	7.1	10.7	36	. .	780	. .	760	. .	72.0	16 18 40.5	. .	+ 15.9	67 25 17.6	− 0.9
47	345 44	19.8	19.6	4.0	7.0	35	390	. .	. .	. .	385	72.0	14 12 16.1	. .	+ 13.7	65 18 51.0	. .
48	345 44	19.8	19.6	4.0	7.0	34	. .	615	. .	585	. .	72.0	14 12 3.8	. .	+ 13.7	65 18 38.7	. .
49	337 34	20.0	20.5	4.6	7.7	37	. .	750	. .	695	. .	72.0	22 22 52.2	. .	+ 22.3	73 29 35.7	0.0
50	304 30	17.0	17.5	1.4	6.2	30	. .	750	. .	715	. .	72.0	55 25 2.3	. .	+ 1 18.5	106 32 42.0	− 0.2

No.	Barom.	At. Ther.
	in.	°
1	30.10	67.5
2	30.13	72.0
17	30.01	72.0
27	30.12	69.0
34	30.02	71.5
39	29.72	77.0
41	29.75	79.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
5	−47 44.3	+ 15 1.9	. .	− 32 42.4
37	−49 59.0	− 15 9.3	. .	− 65 8.3
40	− 2.5	+ 15 48.0	. .	+ 15 45.5
41	− 2.5	− 15 48.0	. .	− 15 50.5
42	− 1.7	− 2.7	. .	− 4.4
43	− 1.7	+ 2.7	− 0.1	+ 0.9
47	− 1.4	− 6.2	. .	− 7.6
48	− 1.4	+ 6.2	− 0.1	+ 4.7

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
June 1	1	a^2 Geminorum . .	E.	4.6	7.6	9.4	16.6	19.0	21.4	28.5	30.4	33.4	26 18.99	— 0.64	+14.79	+14.80	7 26 33.15	+ 0.25
	2	a Canis Minoris .	E.	15.2	17.9	19.4	25.5	27.6	29.7	35.8	37.3	39.9	32 27.59	— 0.50	+14.81	+14.80	7 32 41.89	— 0.17
	3	β Geminorum . .	E.	7.9	10.8	12.5	19.4	21.7	24.0	31.0	32.8	35.8	37 21.77	— 0.61	+14.78	+14.80	7 37 35.96	— 0.01
	4	θ Virginis . . .	E.	0.4	3.0	4.5	10.6	12.8	14.8	20.8	22.5	25.0	3 12.71	— 0.42	+14.72	+14.79	13 3 27.08	+ 0.03
	5	Polaris, S. P. (R.).	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	6	Polaris, S. P. . .	E.	. .	. .	10.5	46.0	19.5	54.5	. .	. .	. .	11 19.85	+12.91	. .	+14.79	1 11 47.55	— 4.59
	7	a Virginis . . .	E.	8.0	10.7	12.2	16.5	. .	20.6	22.6	. .	33.0	18 20.55	— 0.39	+14.68	+14.79	13 18 34.95	+ 0.00
	8	XIII, 14 . . .	E.	19.6	22.9	24.7	32.5	35.0	37.6	45.4	47.2	50.4	27 35.03	— 0.20	. .	+14.79	13 27 49.53	— 1.50
	9	XIII, 16 . . .	E.	. .	. .	35.3	37.9	40.6	43.2	46.0	. .	. .	29 40.60	— 0.27	. .	+14.79	13 29 55.12	— 1.51
	10	XIII, 19 . . .	E.	. .	. .	1.6	3.9	6.0	8.3	10.6	. .	. .	31 6.08	— 0.34	. .	+14.79	13 31 20.53	— 1.71
	11	η Bootis . . .	E.	15.6	18.4	20.0	26.6	28.7	30.9	37.4	39.0	41.8	43 28.71	— 0.52	+14.69	+14.79	13 48 42.98	+ 0.05
	12	ϵ Bootis . . .	E.	3.0	6.0	7.8	14.7	17.0	19.2	26.2	28.0	30.8	39 16.97	— 0.66	+14.80	+14.78	14 39 31.09	— 0.04
	13	B. A. C. 4905 . .	E.	9.5	12.1	13.8	20.3	22.5	24.7	31.1	32.8	35.6	45 22.49	— 0.52	. .	+14.78	14 45 36.75	— 1.94
	14	XIV, 24 . . .	E.	34.0	36.9	38.8	46.1	48.5	50.9	58.5	0.3	3.4	47 48.60	— 0.30	. .	+14.78	14 48 3.08	— 1.94
	15	XIV, 27 . . .	E.	16.4	19.4	21.2	28.0	30.3	32.5	39.7	41.5	44.4	49 30.38	— 0.32	. .	+14.78	14 49 44.84	— 1.90
	16	β Bootis . . .	E.	44.0	47.6	49.6	57.7	0.4	3.0	11.2	13.2	16.6	57 0.37	— 0.66	. .	+14.78	14 57 14.49	+ 0.15
	17	B. A. C. 5001 . .	E.	10.0	12.8	14.5	21.4	23.8	26.1	33.3	35.0	38.0	5 23.88	— 0.58	. .	+14.78	15 5 38.08	— 2.02
	18	XV, 4	E.	31.5	34.5	36.3	43.4	45.6	48.1	55.3	57.2	0.1	10 45.78	— 0.32	. .	+14.78	15 11 0.24	— 2.02
	19	B. A. C. 5072 . .	E.	. .	. .	. .	33.8	36.2	38.6	43.8	45.6	48.8	16 33.90	— 0.60	. .	+14.78	15 16 48.08	— 2.21
	20	XV, 9	E.	22.6	25.4	26.9	33.5	35.7	37.9	44.4	46.2	48.9	18 35.72	— 0.35	. .	+14.78	15 18 50.15	— 1.96
	21	B. A. C. 5098 . .	E.	11.9	14.8	16.6	23.6	26.0	28.2	35.4	37.0	40.0	22 25.94	— 0.58	. .	+14.78	15 22 40.14	— 2.15
	22	XV, 14	E.	. .	. .	47.8	50.1	53.0	55.6	58.3	. .	. .	25 52.96	— 0.28	. .	+14.78	15 26 7.46	— 2.22
	23	B. A. C. 5146 . .	E.	25.0	27.8	29.4	35.6	37.9	40.0	46.5	48.2	50.9	29 37.92	— 0.51	. .	+14.78	15 29 52.19	— 2.02
	24	XV, 19	E.	26.4	29.4	31.3	38.5	40.8	43.2	50.4	52.1	55.0	33 40.79	— 0.31	. .	+14.78	15 33 55.26	— 2.13
	25	XV, 22	E.	6.5	9.4	11.0	18.2	20.5	22.8	29.6	31.5	34.4	38 20.43	— 0.33	. .	+14.78	15 38 34.88	— 2.09
	26	Thyra	E.	. .	. .	. .	. .	. .	. .	. .	22.5	25.7	46 10.44	— 0.29	. .	+14.78	15 46 24.93	. .
	27	Metis	E.	11.5	14.2	15.8	22.3	24.5	26.6	33.0	34.7	37.5	55 24.46	— 0.36	. .	+14.78	15 55 38.88	. .
	28	B. A. C. 5322 . .	E.	. .	. .	37.7	40.0	42.3	44.5	48.9	50.6	53.7	56 40.06	— 0.54	. .	+14.78	15 56 54.30	— 2.09
	29	B. A. C. 5388 . .	E.	. .	. .	30.7	33.6	36.6	39.5	42.8	. .	. .	4 36.56	— 0.70	. .	+14.78	16 4 50.64	— 2.52
	30	δ Ophiuchi . . .	E.	20.0	22.5	24.0	30.2	32.3	34.4	40.4	42.0	44.5	7 32.26	— 0.42	−14.79	+14.78	16 7 46.62	+ 0.01
	31	Lutetia	E.	48.7	51.5	53.0	59.7	1.9	4.0	10.6	12.2	15.0	52 1.84	— 0.35	. .	+14.78	16 52 16.27	. .
	32	d Herculis . . .	E.	30.6	33.6	35.5	42.8	45.3	47.8	55.2	57.0	0.1	56 45.32	— 0.60	. .	+14.78	16 56 59.50	+ 0.19
	33	B. A. C. 5776 . .	E.	. .	. .	11.6	. .	17.9	20.9	24.1	. .	. .	1 17.85	— 0.74	. .	+14.78	17 1 31.89	— 2.54
	34	B. A. C. 5785 . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	2 32.40	— 0.82	. .	+14.78	17 2 46.36	— 2.77
	35	B. A. C. 5785^2. .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	2 32.46	— 0.83	. .	+14.78	17 2 46.41	— 2.77
	36	a Herculis . . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	8 41.86	— 0.50	+14.82	+14.78	17 8 56.14	— 0.02
	37	XVII, 5 . . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	17 59.90	— 0.33	. .	+14.78	17 18 14.35	— 2.28
	38	B. A. C. 5918 . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	24 0.70	— 0.89	. .	+14.78	17 24 14.59	— 2.90
	39	XVII, 20 . . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	44 17.82	— 0.29	. .	+14.78	17 44 32.31	— 2.47
	40	B. A. C. 6073 . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	50 7.98	— 0.56	. .	+14.77	17 50 22.19	— 1.99
	41	B. A. C. 6087 . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	53 28.80	— 0.58	. .	+14.77	17 53 42.99	— 2.01
	42	γ^2 Sagittarii . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	57 30.81	— 0.32	+14.73	+14.77	17 57 45.26	+ 0.05
	43	μ^1 Sagittarii . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	6 1.51	— 0.35	+14.67	+14.77	18 6 15.83	0.00
	44	δ Ursæ Minoris. .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	13 4.70	— 5.67	. .	+14.77	18 13 13.80	— 1.66
	45	Moon II, S. . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	24 8.08	— 0.32	. .	+14.77	18 24 22.53	−72.74
	46	1 Aquilæ	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	28 8.67	— 0.40	+14.72	+14.77	18 28 23.01	+ 0.12
	47	a Lyræ	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	32 28.36	— 0.64	+14.59	+14.77	18 32 42.49	+ 0.20
	48	a Arietis	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	59 49.84	— 0.68	+14.76	+14.80	2 0 3.96	+ 0.05
2	49	Sun II, N. . . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	42 34.16	— 0.68	. .	+14.80	4 42 48.28	−68.48
	50	γ Geminorum . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	30 11.33	— 0.68	+14.80	+14.79	6 30 25.44	— 0.04

5. Bisections at wires D_1 and D_2.
9. Bisections at wires II and III.
22, 29. Bisections at set B and D.
26, 27, 31. Wire A used.
33. Bisections at wires V and VI, and decreased five revolutions in reduction. The next observing-book was lost.
34, 35. The mean of the microscopes was apparently 10″ too great, decreased by that amount in reduction.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	353 12	10 15.8	15.0	1.6	3.5	33	. .	050	. .	975	. .	72.0	6 43 35.9	82.5	+ 6.4	57 50 3.5	− 1.5
2	320 36	20.5	22.0	6.5	10.2	35	. .	050	. .	035	. .	72.0	33 20 12.7	. .	+ 35.7	84 27 9.6	− 1.5
3	349 22	16.8	18.6	1.9	4.8	32	. .	905	. .	885	. .	72.0	10 33 35.7	. .	+ 10.1	61 40 7.0	− 0.9
4	316 12	20.0	18.5	2.7	1.0	37	. .	700	. .	660	. .	72.3	43 44 49.1	. .	+ 53.6	94 52 3.9	− 2.2
5	127 28	24.7	25.1	6.6	11.0	30	. .	. .	. .	440	400	72.3	232 27 6.1	. .	+ 1 12.8	358 38 2.3	− 2.3
6	52 22	16.5	4.9	0.0	0.3	30	. .	295	. .	285	. .	72.3	307 32 53.4	. .	− 1 12.8	358 38 1.8	− 2.8
7	310 31	24.2	24.5	6.2	11.5	37	. .	730	. .	685	. .	72.3	49 22 55.6	. .	+ 1 5.3	100 30 22.1	+ 0.3
8	284 12	23.2	21.4	5.0	7.7	37	580	520	. .	. .	. .	72.3	75 44 50.2	. .	+ 3 36.9	126 54 48.3	−18.2
9	280 52	23.0	20.7	4.2	6.5	36	040	995	. .	. .	. .	72.3	79 4 26.4	. .	+ 4 41.9	130 15 29.5	−18.8
10	298 2	25.0	25.5	8.3	12.0	38	. .	200	. .	150	. .	72.3	61 55 3.7	67.0	+ 1 44.8	113 3 9.7	−15.3
11	340 4	24.5	19.8	2.7	5.0	32	. .	660	. .	610	. .	72.3	19 51 34.5	. .	+ 20.3	70 58 16.0	+ 0.8
12	348 40	17.4	15.3	0.4	1.3	38	. .	960	. .	920	. .	72.3	11 17 6.7	. .	+ 11.3	62 23 39.2	− 1.8
13	340 40	17.1	16.2	28.8	2.3	34	. .	250	. .	210	. .	72.3	19 15 54.5	. .	+ 19.7	70 22 35.4	− 6.9
14	257 46	24.3	24.1	6.2	9.3	40	125	075	. .	. .	. .	72.3	72 11 30.9	. .	+ 2 53.8	123 20 45.9	−15.9
15	292 26	23.2	20.8	5.2	7.2	35	. .	835	. .	810	. .	72 3	67 30 24.1	. .	+ 2 15.5	118 39 0.8	−15.2
16	1 56	20.8	21.3	4.0	5.3	35	. .	885	. .	850	. .	72.3	358 0 24.0	. .	− 2.0	49 6 43.2	− 1.5
17	350 46	22.0	22.2	5.2	6.7	38	. .	580	. .	545	. .	72.3	9 11 6.3	. .	+ 9.1	60 17 36.6	− 6.0
18	290 20	18.7	17.5	1.3	3.1	34	. .	920	. .	820	. .	72.3	69 36 5.5	. .	+ 2 31.0	120 44 57.7	−14.9
19	354 26	21.0	21.5	4.7	5.0	36	. .	. .	. .	210	180	72.3	5 30 29.6	. .	+ 5.5	56 36 56.3	− 6.0
20	300 8	22.3	22.3	4.5	8.2	35	. .	595	. .	545	. .	72.3	59 48 20.5	. .	+ 1 36.9	110 56 18.6	−13.6
21	350 36	25.2	24.5	7.5	9.3	38	. .	385	. .	375	. .	72.3	9 21 6.1	. .	+ 9.3	60 27 36.6	− 6.8
22	282 12	17.3	17.3	0.3	2.8	38	105	. .	. .	. .	085	72.3	77 44 54.3	. .	+ 4 14.6	128 55 30.1	−15.0
23	339 8	23.3	22.1	5.2	8.0	37	. .	320	. .	305	. .	72.3	20 48 47.7	. .	+ 21.5	71 55 30.4	− 8.6
24	289 38	24.4	25.3	6.9	9.6	32	. .	480	. .	400	. .	72.3	70 17 34.7	. .	+ 2 36.9	121 26 32.8	−14.1
25	293 24	20.1	20.3	3.2	5.7	32	. .	560	. .	495	. .	72.3	66 31 31.8	. .	+ 2 9.8	117 40 2.8	−13.6
26	284 38	25.3	24.6	7.5	9.5	35	. .	. .	. .	925	885	72.3	75 15 54.9	. .	+ 3 32.2	126 25 48.3	− 4.7
27	301 14	16.5	15.2	29.3	1.5	37	. .	360	. .	305	. .	72.3	58 40 8.2	. .	+ 1 33.0	109 48 2.4	− 4.5
28	344 12	21.7	19.9	2.4	5.0	35	. .	. .	. .	015	005	72.3	15 44 10.6	. .	+ 16.0	66 50 47.8	− 8.9
29	6 18	24.0	23.2	6.5	8.8	33	720	. .	. .	. .	685	72.3	353 37 53.4	. .	− 6.3	44 44 8.3	− 7.3
30	317 42	15.5	14.4	27.2	0.5	38	. .	. .	. .	840	810	72.3	42 15 3.4	. .	+ 51.6	93 22 16.2	+ 1.0
31	299 14	20.0	18.0	1.8	5.8	41	. .	650	. .	525	. .	72.3	60 41 16.6	. .	+ 1 41.3	111 49 19.1	− 6.1
32	354 48	22.5	20.6	4.0	5.6	36	. .	610	. .	590	. .	72.3	5 8 35.5	. .	+ 5.1	56 15 1.8	− 0.1
33	10 0	15.7	13.8	28.0	29.2	36	. .	. .	. .	760	720	72.3	349 55 14.8	60.0	− 10.1	41 1 25.9	−10.4
34	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	72.3	344 15 54.2	. .	− 16.1	35 21 59.3	−10.3
35	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	72.3	344 15 55.5	. .	− 16.1	35 22 0.6	−10.3
36	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	72.3	24 21 12.5	. .	+ 25.9	75 27 59.6	− 2.0
37	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	72.3	66 20 33.0	. .	+ 2 9.7	117 29 3.9	− 9.1
38	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	72.3	340 8 41.5	. .	− 20.6	31 14 42.1	−11.6
39	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	72.3	74 25 40.7	. .	+ 3 22.4	125 35 24.3	− 6.9
40	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	72.3	12 49 16.9	. .	+ 13.0	63 55 51.1	−11.9
41	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	72.3	8 41 36.1	. .	+ 8.8	59 48 6 1	−12.2
42	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	72.3	69 16 34.0	. .	+ 2 30.3	120 25 25.5	− 4.5
43	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	72.3	59 57 24.0	. .	+ 1 38.9	111 5 24.1	− 4.6
44	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	72.3	312 18 26.1	. .	− 1 3.0	3 23 44.3	− 3.5
45	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	72.3	67 49 8.6	. .	+ 2 19.9	118 57 49.7	. .
46	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	72.3	47 12 30.2	. .	+ 1 2.0	98 19 53.4	− 2.1
47	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	72.3	0 13 46.6	. .	+ 0.2	51 20 8.0	− 2.3
48	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	73.4	16 1 24.9	. .	+ 16.1	67 8 2.2	− 1.5
49	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	73.4	16 23 27.5	. .	+ 16.5	67 30 5.2	. .
50	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .		. .	. .		. .

No.	Barom.	At. Ther.
	in.	°
1	29.79	80.0
19	29.91	70.0
33	30.00	63.5

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
45	−52 12.3	− 15 25.7	. .	− 67 38.0
49	− 2.4	+ 15 48.2	. .	+ 15 45.8

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
June 2	1	Venus II, N.	F.	..	..	..	..	..	..	..	..	..	31 20.62	− 0.68	. .	+14.79	6 31 34.73	+ 0.42
	2	Venus S.	F.	..	..	..	..	..	..	..	..	..	. . .	. .	. .	. .	. . .	. .
	3	α Canis Majoris.	F.	..	..	..	..	..	..	..	..	..	39 20.70	− 0.69	+14.82	+14.79	6 39 34.80	− 0.11
	4	ε Canis Majoris.	F.	..	..	..	..	..	..	..	..	..	53 25.48	− 0.71	+14.81	+14.79	6 53 39.36	− 0.27
	5	δ Canis Majoris.	F.	..	..	..	..	..	..	..	..	..	3 1.26	− 0.70	+14.75	+14.79	7 3 15.35	− 0.01
	6	α Canis Minoris	F.	..	..	..	..	..	..	..	..	..	32 27.76	− 0.67	+14.81	+14.78	7 32 41.87	− 0.19
	7	β Geminorum	F.	..	..	..	..	..	..	..	..	..	37 21.81	− 0.67	+14.80	+14.78	7 37 35.92	− 0.05
4	8	12 Canum Venat.	Sk.	..	..	..	..	..	..	..	..	..	49 55.87	− 0.74	+14.55	+14.64	12 49 9.77	+ 0.09
	9	θ Virginis	Sk.	..	..	..	..	..	..	..	..	..	3 13.13	− 0.78	+14.64	+14.63	13 3 26.98	− 0.05
	10	Polaris, S. P.	Sk.	..	..	..	..	..	..	..	..	..	11 38.50	+ 1.64	. .	+14.63	1 11 54.77	+ 0.42
	11	XIII, 15	Sk.	..	..	..	..	..	..	..	..	..	28 25.44	− 0.84	. .	+14.63	13 28 39.23	− 1.44
	12	XIII, 16	Sk.	..	..	..	..	..	..	..	..	..	29 41.18	− 0.87	. .	+14.63	13 29 54.94	− 1.49
	13	ε Bootis	Sk.	..	..	..	..	..	..	..	..	..	39 17.23	− 0.75	+14.62	+14.63	14 39 31.11	− 0.01
	14	B. A. C. 4897	Sk.	..	..	..	..	..	..	..	..	..	43 58.33	− 0.75	. .	+14.63	14 44 12.21	− 2.24
	15	XIV, 25	Sk.	..	..	..	..	..	..	..	..	..	48 59.39	− 0.81	. .	+14.63	14 49 13.21	− 1.86
	16	β Bootis	Sk.	..	..	..	..	..	..	..	..	..	57 0.47	− 0.75	. .	+14.62	14 57 14.33	+ 0.01
	17	B. A. C. 5000	Sk.	..	..	..	..	..	..	..	..	..	5 21.02	− 0.74	. .	+14.62	15 5 34.90	− 2.19
	18	B. A. C. 5071	Sk.	..	..	..	..	..	..	..	..	..	16 11.86	− 0.76	. .	+14.62	15 16 25.73	− 2.79
	19	μ^1 Bootis	Sk.	..	..	..	..	..	..	..	..	..	19 32.21	− 0.75	+14.72	+14.62	15 19 46.08	− 0.11
8	20	Moon II	S.	..	..	..	..	..	..	..	..	..	57 56.22	+ 0.17	. .	+13.92	0 58 10.31	−67.75
	21	Polaris.	S.	..	..	..	..	..	..	..	..	..	12 30.90	−48.50	. .	+13.91	1 11 56.31	− 1.45
	22	η Piscium	S.	..	..	..	..	..	..	..	..	..	24 30.69	− 0.03	+13.86	+13.91	1 24 44.53	+ 0.12
	23	β Arietis	S.	..	..	..	..	..	..	..	..	..	47 26.96	− 0.14	+13.91	+13.91	1 47 40.75	+ 0.02
	24	α Arietis	S.	..	..	..	..	..	..	..	..	..	59 50.34	− 0.19	+13.97	+13.91	2 0 4.0	− 0.05
	25	δ Persei	E.	..	..	..	..	..	..	..	..	..	33 43.81	− 0.91	. .	+13.80	3 33 56.74	+ 0.25
	26	η Tauri	E.	..	..	..	..	..	..	..	..	..	39 45.68	− 0.21	+13.74	+13.80	3 39 59.27	+ 0.06
	27	α Tauri	E.	..	..	..	..	..	..	..	..	..	28 27.20	− 0.06	+13.78	+13.79	4 28 40.93	− 0.01
9	28	Sun I, N.	E.	..	..	..	..	..	..	..	..	..	9 7.81	− 0.20	. .	+13.78	5 9 21.37	. .
	29	Sun II, S.	E.	..	..	..	..	..	..	..	..	..	11 25.26	− 0.20	. .	+13.78	5 11 38.8	. .
	30	Mercury I, N.	E.	..	..	..	..	..	..	..	..	..	27 0.18	− 0.25	. .	+13.78	5 27 13.71	+ 0.23
	31	Mercury S.	E.	..	..	..	..	..	..	..	..	..	. . .	. .	. .	. .	. . .	. .
	32	γ Geminorum	E.	..	..	..	..	..	..	..	..	..	30 11.76	− 0.07	+13.79	+13.77	6 30 25.41	− 0.05
	33	α Canis Majoris	E.	..	..	..	..	..	..	..	..	..	39 20.44	+ 0.50	+13.90	+13.77	6 39 34.71	− 0.21
	34	Venus I, S.	E.	..	..	..	..	..	..	..	..	..	8 29.14	− 0.22	. .	+13.76	7 8 42.65	+ 0.44
	35	Venus N.	E.	..	..	..	..	..	..	..	..	..	. . .	. .	. .	. .	. . .	. .
	36	α^2 Geminorum	E.	..	..	..	..	..	..	..	..	..	26 19.76	− 0.41	+13.78	+13.76	7 26 33.11	+ 0.22
	37	α Canis Minoris	E.	..	..	..	..	..	..	..	..	..	32 27.91	+ 0.14	+13.74	+13.76	7 32 41.81	− 0.24
	38	12 Canum Venat.	E.	..	..	..	..	..	..	..	..	..	49 56.48	− 0.54	+13.67	+13.69	12 50 9.63	+ 0.02
	39	θ Virginis	E.	..	..	..	..	..	..	..	..	..	3 12.82	+ 0.52	+13.62	+13.69	13 3 27.03	+ 0.03
	40	Polaris, S. P.	E.	..	..	..	..	..	..	..	..	..	10 47.80	+55.75	. .	+13.69	1 11 57.24	− 0.96
	41	α Virginis	E.	..	..	..	..	..	..	..	..	..	18 20.46	+ 0.63	+13.72	+13.69	13 18 34.78	− 0.05
	42	XIII, 18	E.	..	..	..	..	..	..	..	..	..	29 51.70	+ 0.96	. .	+13.68	13 30 6.34	− 1.42
	43	α Bootis	E.	..	..	..	..	..	..	..	..	..	9 43.03	0.00	+13.63	+13.68	14 9 56.71	+ 0.05
	44	Anonymous	E.	..	..	..	..	..	..	..	..	..	11 32.39	− 1.13	. .	+13.68	14 11 44.94	− 2.54
	45	B. A. C. 4752	E.	..	..	..	..	..	..	..	..	..	12 42.64	− 1.13	. .	+13.67	14 12 55.18	− 2.54
	46	θ Bootis	E.	..	..	..	..	..	..	..	..	..	20 44.72	− 1.16	. .	+13.67	14 20 57.23	+ 0.23
	47	ε Bootis	E.	..	..	..	..	..	..	..	..	..	39 17.70	− 0.19	+13.57	+13.67	14 39 31.18	+ 0.08
	48	B. A. C. 4905	E.	..	..	..	..	..	..	..	..	..	45 23.07	+ 0.01	. .	+13.67	14 45 36.75	− 1.93

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	73.4	14 13 59.2	. .	+ 14.1	65 20 34.5	. .
2	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	73.4	14 14 9.4	. .	+ 14.1	65 20 44.7	. .
3	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	73.4	55 25 0.3	. .	+ 1 20.6	106 32 42.1	+ 0.1
4	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	73.4	67 39 29.2	. .	+ 2 14.4	118 48 4.8	− 3.4
5	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	73.4	65 3 18.5	. .	+ 1 58.8	116 11 38.5	− 1.6
6	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	73.4	33 20 12.4	. .	+ 36.6	84 27 10.2	− 0.8
7	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	73.4	10 33 37.3	. .	+ 10.4	61 40 8.9	+ 1.0
8	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	74.4	359 53 37.8	. .	− 0.1	40 59 58.9	+ 0.5
9	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	74.4	43 44 51.7	. .	+ 53.4	94 52 6.3	+ 0.4
10	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	74.4	307 32 53.6	. .	− 1 12.5	358 38 2.3	− 1.9
11	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	74.4	70 34 57.1	. .	+ 2 37.0	121 43 55.3	−17.4
12	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	74.4	79 4 33.8	. .	+ 4 40.6	130 15 35.6	−19.1
13	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	74.4	11 17 7.8	. .	+ 11.2	62 23 40.2	− 0.3
14	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	74.4	0 33 47.5	. .	+ 0.6	51 40 9.3	− 2.7
15	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	74.4	60 20 40.2	. .	+ 1 38.3	111 28 39.7	−14.3
16	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	74.4	358 0 24.1	. .	− 2.0	49 6 41.3	− 2.7
17	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	74.4	5 20 12.3	. .	+ 5.2	56 26 38.7	− 4.7
18	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	74.4	316 29 6.9	. .	− 13.5	37 35 14.6	− 2.6
19	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	74.4	1 4 29.6	. .	+ 1.1	52 10 51.9	+ 0.2
20	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .		. .	. .		. .
21	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .		. .	. .		. .
22	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .		. .	. .		. .
23	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .		. .	. .		. .
24	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .		. .	. .		. .
25	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.6	351 30 47.3	. .	− 7.9	42 37 0.6	− 2.3
26	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.6	15 10 30.3	. .	+ 14.4	66 17 5.9	− 0.8
27	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.6	22 37 57.6	. .	+ 22.1	73 44 40.9	+ 1.9
28	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.6	15 39 28.9	. .	+ 14.8	66 46 4.9	. .
29	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.6	16 11 3.1	. .	+ 15.3	67 17 39.6	. .
30	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.6	13 31 5.6	. .	+ 12.7	64 37 39.5	. .
31	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.6	13 31 12.4	. .	+ 12.7	64 37 46.3	. .
32	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.6	22 22 53.6	. .	+ 21.7	73 29 36.5	+ 0.9
33	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.6	55 25 3.2	. .	+ 1 16.1	106 32 40.5	− 0.1
34	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.6	14 47 25.7	. .	+ 13.9	65 54 0.8	. .
35	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.6	14 47 13.3	. .	+ 13.9	65 53 48.4	. .
36	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.6	6 43 37.8	. .	+ 6.2	57 50 5.2	− 0.2
37	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.6	33 20 14.1	. .	+ 34.6	84 27 9.9	− 0.5
38	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.3	359 53 36.7	. .	− 0.1	50 59 57.8	0.0
39	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.3	43 44 52.3	. .	+ 51.7	94 52 5.2	− 0.5
40	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.3	307 32 51.2	. .	− 1 10.1	358 38 2.3	− 1.4
41	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.3	49 22 57.6	. .	+ 1 2.9	100 30 21.7	+ 0.2
42	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.3	65 52 16.5	. .	+ 1 59.8	117 0 37.5	−16.5
43	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.3	19 3 3.3	. .	+ 18.6	70 9 43.1	+ 0.8
44	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.3	346 56 50.8	. .	− 12.5	38 2 59.5	+ 2.7
45	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.3	347 0 21.0	. .	− 12.5	38 6 29.7	+ 2.7
46	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.3	346 27 46.5	. .	− 13.0	37 33 54.7	− 0.8
47	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.3	11 17 6.1	. .	+ 10.8	62 23 38.1	− 1.5
48	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.3	19 15 54.4	. .	+ 19.0	70 22 34.6	− 5.6

No.	Barom.	At. Ther.
	in.	°

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
1	− 1.7	+ 5.1	0.0	+ 3.4
2	− 1.7	− 5.1	. .	− 6.8
28	− 2.4	+ 15 47.3	. .	+ 15 44.9
29	− 2.4	− 15 47.3	. .	− 15 49.7
30	− 1.8	+ 3.4	0.0	+ 1.6
31	− 1.8	− 3.4	. .	− 5.2
34	− 1.5	− 6.2	. .	− 7.7
35	− 1.5	+ 6.2	0.0	+ 4.7

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt	Clock adopted.	Apparent Right Ascension.	Miscellan'us corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
June 9	1	B. A. C. 4918	E.										48 6.16	− 1.70	. .	+13.67	14 48 18.13	− 3.12
	2	XIV, 26	E.										49 21.26	+ 0.90	. .	+13.67	14 49 35.87	− 1.89
	3	Polaris	E.										12 37.20	−51.91	. .	+13.54	1 11 58.83	+ 0.18
	4	θ^1 Ceti	E.										17 29.52	+ 0.66	+13.52	+13.54	1 17 43.72	+ 0.04
	5	β Arietis	E.										47 27.06	+ 0.08	+13.62	+13.53	1 47 40.67	− 0.07
	6	Moon II, N.	E.										51 49.32	+ 0.28	. .	+13.53	1 52 3.13	−69.11
	7	α Arietis	E.										59 50.57	+ 0.02	+13.56	+13.53	2 0 4.12	− 0.02
	8	β Ursæ Minoris, S. P.	F.										50 52.23	+ 5.16	. .	+13.31	14 51 10.70	− 0.23
	9	α Tauri	F.										28 27.46	+ 0.17	+13.31	. .	. . .	. .
10	10	Sun I, N.	F.										13 16.29	+ 0.01	. .	+13.31	5 13 29.61	. .
	11	Sun II, S.	F.										15 33.86	+ 0.01	. .	+13.31	5 15 47.18	. .
12	12	α Ceti	E.										55 28.43	− 0.10	+13.06	+12.96	2 55 41.29	− 0.08
	13	α Persei	E.										15 7.09	− 0.67	. .	+12.96	3 15 19.38	+ 0.26
	14	δ Persei	E.										33 44.63	− 0.63	. .	+12.95	3 33 56.95	+ 0.38
	15	ζ Persei	E.										45 59.74	− 0.35	+12.91	+12.94	3 46 12.30	+ 0.02
	16	α Tauri	E.										28 28.32	− 0.21	+12.88	+12.93	4 28 41.04	+ 0.03
13	17	Sun I, N.	E.										25 43.53	− 0.28	. .	+12.91	5 25 56.16	. .
	18	Sun II, S.	E.										28 1.37	− 0.28	. .	+12.91	5 28 14.00	. .
	19	γ Geminorum	E.										30 12.80	− 0.22	+12.92	+12.88	6 30 25.46	− 0.07
	20	α Canis Majoris	E.										39 21.83	+ 0.05	+12.97	+12.88	6 39 34.76	− 0.17
	21	ϵ Canis Majoris	E.										53 26.43	+ 0.16	+12.97	+12.88	6 53 39.47	− 0.14
	22	δ Canis Majoris	E.										3 2.26	+ 0.13	+12.89	+12.87	7 3 15.26	− 0.07
	23	δ Geminorum	E.										12 22.82	− 0.27	+12.89	+12.87	7 12 35.42	− 0.08
	24	α^2 Geminorum	E.										26 20.60	− 0.38	+12.91	+12.86	7 26 33.08	+ 0.19
	25	Venus I, S.	E.										29 27.90	− 0.28	. .	+12.86	7 29 40.48	+ 0.44
	26	Venus N.	E.										. . .	. .	. .	. .	. . .	. .
	27	α Canis Minoris	E.										32 29.09	− 0.12	+12.92	+12.86	7 32 41.83	− 0.22
	28	β Geminorum	E.										37 23.46	− 0.34	+12.81	+12.86	7 37 35.98	+ 0.02
	29	Polaris, S. P.	E.										11 26.32	+23.56	. .	+12.74	1 12 2.62	+ 0.63
	30	α Virginis	E.										18 22.04	+ 0.02	+12.73	+12.73	13 18 34.79	− 0.02
	31	ζ Virginis	E.										28 5.14	− 0.07	+12.82	+12.73	13 28 17.86	− 0.09
	32	B. A. C. 4540	E.										29 7.14	− 0.84	. .	+12.73	13 29 19.03	− 2.43
	33	B. A. C. 4605	E.										41 44.19	− 0.81	. .	+12.72	13 41 56.10	− 2.49
	34	η Bootis	E.										48 30.43	− 0.24	+12.62	+12.72	13 48 42.91	+ 0.05
	35	α Bootis	E.										9 44.22	− 0.24	+12.66	+12.72	14 9 56.70	+ 0.09
	36	Anonymous	E.										11 32.78	− 0.73	. .	+12.72	14 11 44.77	− 2.47
	37	B. A. C. 4752	E.										12 43.07	− 0.73	. .	+12.72	14 12 55.06	− 2.48
	38	B. A. C. 4918	E.										48 6.17	− 0.97	. .	+12.70	14 48 17.90	− 3.04
	39	XV, 5	E.										11 19.74	+ 0.23	. .	+12.69	15 11 32.66	− 2.09
	40	B. A. C. 5072	E.										16 35.82	− 0.40	. .	+12.69	15 16 48.11	− 2.18
	41	B. A. C. 5075	E.										17 49.74	− 0.36	. .	+12.69	15 18 2.07	− 2.14
	42	B. A. C. 5098	E.										22 28.00	− 0.35	. .	+12.69	15 22 40.34	− 2.12
	43	B. A. C. 5113	E.										25 13.29	− 0.64	. .	+12.69	15 25 25.34	− 2.56
	44	XV, 15	E.										28 6.62	+ 0.22	. .	+12.69	15 28 19.53	− 2.17
	45	B. A. C. 5178[1]	E.										34 27.60	− 0.45	. .	+12.68	15 34 39.83	− 2.29
	46	B. A. C. 5178[2]	E.										34 28.06	− 0.45	. .	+12.68	15 34 40.29	− 2.29
	47	B. A. C. 5234	E.										42 53.79	− 0.23	. .	+12.68	15 43 6.24	− 2.06
	48	B. A. C. 5252	E.										45 33.63	− 0.26	. .	+12.68	15 45 46.05	− 2.09

12–28. Nadir observation apparently wrong, and the result was obtained from observations of all these stars during the year.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.3	339 5 36.8	. .	— 20.7	30 11 37.3	+ 1.6
2	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.3	64 38 20.3	. .	+ 1 53.9	115 46 35.4	−15.3
3	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.2	310 16 38.7	. .	− 1 4.2	1 21 55.7	− 0.6
4	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.2	47 42 31.1	. .	+ 59.8	98 49 52.1	− 1.4
5	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.2	18 41 51.8	. .	+ 18.3	69 48 31.3	+ 1.1
6	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.2	28 10 52.3	. .	+ 29.0	79 17 42.5	. .
7	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.2	16 1 26.6	. .	+ 15.5	67 8 3.3	+ 0.4
8	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.2	293 35 58.3	. .	− 2 3.1	344 40 16.4	+ 1.2
9	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.2	22 37 57.3	. .	+ 22.4	73 44 40.9	+ 2.0
10	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.2	15 34 47.0	. .	+ 14.9	66 41 23.1	. .
11	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.2	16 6 18.7	. .	+ 15.4	67 12 55.3	. .
12	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	70.8	35 17 10.3	. .	+ 40.2	86 24 11.7	− 2.9
13	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	70.8	349 29 10.5	. .	− 10.5	40 35 21.2	− 1.7
14	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	70.8	351 30 48.7	. .	− 8.4	42 37 1.5	− 1.7
15	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	70.8	7 23 0.1	. .	+ 7.3	58 29 28.6	− 1.5
16	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	70.8	22 37 55.3	. .	+ 23.5	73 44 40.0	+ 1.3
17	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	70.8	15 23 8.0	. .	+ 15.4	66 29 44.6	. .
18	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	70.8	15 54 41.0	. .	+ 16.0	67 1 18.2	. .
19	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	70.8	22 22 51.7	. .	+ 23.0	73 29 35.9	+ 0.4
20	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	70.8	55 24 56.2	. .	+ 1 20.7	106 32 38.1	− 1.7
21	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	70.8	67 39 28.6	. .	+ 2 14.5	118 48 4.3	− 1.3
22	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	70.8	65 3 17.2	. .	+ 1 59.2	116 11 37.6	− 0.2
23	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	70.8	16 40 20.8	. .	+ 16.7	67 47 8.7	+ 1.0
24	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	70.8	6 43 37.6	. .	+ 6.6	57 50 5.4	− 0.2
25	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	70.8	15 21 46.6	. .	+ 15.3	66 28 23.1	. .
26	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	70.8	15 21 30.4	. .	+ 15.3	66 28 6.9	. .
27	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	70 8	33 20 11.2	. .	+ 36.6	84 27 9.0	− 1.1
28	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	70.8	10 33 35.5	. .	+ 10.4	61 40 7.1	− 1.2
29	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	73.3	307 32 56.5	. .	− 1 14.6	358 38 3.1	− 0.3
30	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	73.3	49 22 55.2	. .	+ 1 6.9	100 30 23.3	+ 1.9
31	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	73.3	38 50 3.1	. .	+ 46.3	89 57 10.6	− 0.2
32	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	73.3	342 54 6.0	. .	− 17.7	34 0 9.5	+ 6.7
33	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	73.3	343 50 3.8	. .	− 16.7	34 56 8.3	+ 6.0
34	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	73.3	19 51 32.5	. .	+ 20.8	70 58 14.5	+ 0.8
35	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	73.3	19 3 2.3	. .	+ 19.9	70 9 43.4	+ 1.6
36	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	73.3	346 56 51.3	. .	− 13.4	38 2 59.1	+ 3.5
37	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	73.3	347 0 21.9	. .	− 13.3	38 6 29.8	+ 3.4
38	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	73.3	339 5 34.0	. .	− 22.1	30 11 33.1	+ 2.5
39	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	73.3	72 25 5.3	. .	+ 3 0.5	123 34 27.0	−16.2
40	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	73.3	5 30 27.5	. .	+ 5.6	56 36 54.3	− 3.0
41	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	73.3	8 8 58.1	. .	+ 8.3	59 15 27.6	− 3.9
42	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	73.3	9 21 4.0	. .	+ 9.5	60 27 34.7	− 4.3
43	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	73.3	350 45 1.0	. .	− 9.5	41 51 12.7	− 1.4
44	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	73.3	71 31 13.7	. .	+ 2 51.5	122 40 26.6	−15.4
45	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	73.3	1 50 50.6	. .	+ 1.9	52 57 13.7	− 3.6
46	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	73.3	1 50 53.7	. .	+ 1.9	52 57 16.8	− 3.6
47	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	73.3	20 21 27.9	. .	+ 21.5	71 28 10.6	− 6.8
48	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	73.3	17 31 56.4	. .	+ 18.4	68 38 36.0	− 6.4

No.	Barom.	At. Ther.
	in.	°

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
6	−28 4.2	+ 16 20.5	. .	− 11 43.7
10	− 2.3	+ 15 46.0	. .	+ 15 43.7
11	− 2.4	− 15 46.0	. .	− 15 48.4
17	− 2.3	+ 15 46.8	. .	+ 15 44.5
18	− 2.3	− 15 46.8	. .	− 15 49.1
25	− 1.6	− 8.1	0.0	− 9.7
26	− 1.6	+ 8.1	. .	+ 6.5

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'u Corrections
1874.													m. s.	s.	s.	s.	h. m. s	s.
June 13	1	ε Coronæ Borealis	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	52 12.22	− 0.32	+12.64	+12.68	15 52 24.58	+ 0.04
	2	XV, 27	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	53 13.66	+ 0.16	. .	+12.68	15 53 26.50	− 2.21
	3	XVI, 2	E.	52.4	55.2	57.0	3.4	5.5	7.7	14.4	16.0	18.7	6 5.59	+ 0.10	. .	+12.68	16 6 18.37	− 2.18
	4	δ Ophiuchi	E.	21.8	24.4	26.0	32.2	34.2	36.3	42.4	43.9	46.5	7 34.19	− 0.04	+12.56	+12.68	16 7 46.83	+ 0.14
	5	XVI, 4	E.	. .	. .	48.3	50.8	52.8	55.0	57.2	. .	. .	12 52.82	+ 0.13	. .	+12.68	16 13 5.63	− 2.21
	6	τ Herculis	E.	30.0	33.9	36.0	44.8	47.9	50.8	59.7	2.0	5.8	15 47.88	− 0.61	. .	+12.68	16 15 59.95	+ 0.28
	7	XVI, 8	E.	18.6	21.6	23.3	30.4	32.7	35.0	42.0	43.9	46.9	21 32.71	+ 0.18	. .	+12.67	16 21 45.56	− 2.36
	8	XVI, 11	E.	9.0	12.3	14.1	21.6	24.0	26.6	34.0	36.0	39.2	25 24.09	+ 0.24	. .	+12.67	16 25 37.00	− 2.48
	9	B. A. C. 5560	E.	5.3	10.7	14.0	26.6	30.9	35.2	47.7	51.0	56.3	30 30.86	− 1.02	. .	+12.67	16 30 42.51	− 3.45
	10	XVI, 14	E.	. .	. .	1.5	4.0	6.5	9.2	11.8	. .	. .	35 6.60	+ 0.27	. .	+12.67	16 35 19.54	− 2.59
	11	Lutetia	E.	23.6	26.2	27.9	34.5	36.6	38.7	45.5	47.0	50.0	39 36.67	+ 0.11	. .	+12.67	16 39 49.45	. .
14	12	α Ceti	S.	17.9	20.5	22.0	28.0	30.2	32.2	38.5	39.9	42.4	55 30.18	− 0.15	+11.42	+11.47	2 55 41.50	+ 0.07
15	13	Sun I, S.	S.	. .	. .	1.5	3.8	6.0	8.2	12.5	14.4	17.2	34 3.76	− 0.30	. .	+11.40	5 34 14.86	. .
	14	Sun II, N.	S.	8.0	10.9	12.8	19.2	21.6	23.7	30.6	32.2	34.9	36 21.54	− 0.30	. .	+11.40	5 36 32.64	. .
	15	Mercury I, C.	S.	58.7	0.4	4.8	7.2	9.3	11.6	13.9	18.3	19.9	11 9.34	− 0.31	. .	+11.35	7 11 20.38	+ 0.23
	16	α^2 Geminorum	S.	7.7	10.9	12.6	19.8	22.2	24.6	32.0	33.7	36.7	26 22.24	− 0.40	+11.30	+11.34	7 26 33.18	+ 0.28
	17	β Geminorum	S.	11.0	13.9	15.8	22.4	24.6	27.2	34.2	35.9	38.7	37 24.89	− 0.35	+11.39	+11.34	7 37 35.88	− 0.08
	18	Venus I	S.	39.7	42.5	48.7	51.0	53.0	55.2	57.6	3.6	6.3	39 53.07	− 0.30	. .	+11.34	7 40 4.11	+ 0.44
	19	B. A. C. 4643	S.	. .	. .	27.9	45.4	3.8	21.9	39.2	. .	. .	46 3.64	− 4.43	. .	+11.14	13 46 10.35	− 9.47
	20	α Draconis	S.	. .	. .	41.9	46.7	51.6	56.4	1.3	. .	. .	0 51.58	− 1.14	. .	+11.14	14 1 1.58	− 0.35
	21	α Bootis	S.	32.7	35.5	37.0	43.6	45.7	47.9	54.4	56.0	58.8	9 45.73	− 0.28	+11.17	+11.14	14 9 56.59	− 0.03
17	22	β Libræ	E.	53.6	56.0	57.8	4.0	6.0	8.0	14.5	15 9	18.5	10 6.03	− 0.09	+ 9.67	+ 9.69	15 10 15.63	+ 0.02
	23	B. A. C. 5075	E.	. .	. .	48.1	50.5	52.8	55.4	57.7	. .	. .	17 52.90	− 0.48	. .	+ 9.69	15 18 2.11	− 2.12
	24	XV, 10	E.	51.5	54.7	56.7	4.2	6.6	9.4	17.0	19.0	22.0	19 6.79	+ 0.18	. .	+ 9.69	15 19 16.66	− 2.18
	25	XV, 12	E.	44.0	47.0	48.8	55.8	58.0	0.4	7.4	9.1	12.0	23 58.06	+ 0.06	. .	+ 9.69	15 24 7.84	− 2.23
	26	B. A. C 5116	E.	. .	. .	17.2	21.5	26.2	30.9	39.7	42.8	48.6	25 21.78	− 1.28	. .	+ 9.69	15 25 30.19	− 3.28
	27	α Coronæ Borealis	E.	. .	. .	9.5	11.7	14.0	16.2	18.6	. .	. .	29 14.00	− 0.44	+ 9.77	+ 9.69	15 29 23.25	− 0.08
	28	XV, 20	E.	46.4	49.6	51.5	58.5	0.9	3.1	10.4	11.9	14.9	34 0.80	+ 0.11	. .	+ 9.68	15 34 10.59	− 2.16
	29	XV, 23	E.	41.7	44.5	46.0	52.5	54.8	57.0	3.5	5.0	7.8	39 54.76	+ 0.01	. .	+ 9.68	15 40 4.45	− 2.09
	30	B. A. C. 5249	E.	13.0	18.9	22.1	35.5	40.0	44.5	58.0	1.3	7.0	44 40.03	− 1.20	. .	+ 9.68	15 44 48.42	− 3.34
	31	B. A. C. 5259	E.	. .	. .	17.2	19.8	22.4	24.8	27.6	. .	. .	46 22.36	− 0.50	. .	+ 9.68	15 46 31.48	− 2.27
	32	B. A. C. 5307	E.	53.7	58.8	9.8	13.8	17.8	21.9	25.9	36.7	42.0	53 17.82	− 1.12	. .	+ 9.68	15 53 26.38	− 3.08
	33	B. A. C. 5322	E.	31.6	34.6	36.1	42.8	45.0	47.1	53.8	55.6	58.3	56 44.99	− 0.39	. .	+ 9.67	15 56 54.27	− 2.15
	34	B. A. C. 5400	E.	. .	. .	. .	. .	15.4	18.5	24.1	26.4	29.9	6 12.76	− 0.70	. .	+ 9.67	16 6 21.73	− 2.47
	35	B. A. C. 5426	E.	. .	. .	42.0	44.3	46.5	48.6	50.8	. .	. .	9 46.44	− 0.30	. .	+ 9.67	16 9 55.75	− 2.12
	36	XVI, 5	E.	. .	. .	47.3	50.0	52.6	55.3	57.9	. .	. .	13 52.62	+ 0.22	. .	+ 9.67	16 14 2.51	− 2.57
	37	B. A. C. 5480	E.	22.8	25.8	27.7	35.0	37.6	40.1	47.4	49.4	52.5	17 37.59	− 0.53	. .	+ 9.67	16 17 46.73	− 2.28
	38	XVI, 8	E.	. .	. .	. .	. .	. .	. .	45.2	46.9	49.6	21 35.68	+ 0.11	. .	+ 9.66	16 21 45.45	− 2.39
	39	B. A. C. 5532	E.	22.0	25.4	27.0	33.2	35.3	37.4	43.7	45.2	47.7	26 35.31	− 0.27	. .	+ 9.66	16 26 44.70	− 2.12
	40	ζ Ophiuchi	E.	53.6	56.3	58.0	3.9	6.0	8.0	14.3	15.9	18.6	30 6.07	− 0.07	+ 9.51	+ 9.66	16 30 15.66	+ 0.15
	41	Lutetia	E.	30.7	33.4	35.2	41.7	44.0	46.1	52.7	54.3	57.0	35 43.90	+ 0.03	. .	+ 9.66	16 35 53.59	. .
	42	α^1 Herculis	E.	34.3	36.9	38.5	44.9	47.0	49.0	55.5	57.0	59.7	8 46.98	− 0.30	+ 9.66	+ 9.64	17 8 56.32	0.00
	43	Anonymous	E.	. .	. .	6.6	8.8	10.8	12.7	14.8	. .	. .	12 10.74	− 0.03	. .	+ 9.64	17 12 20.35	. .
	44	B. A. C. 5886[1]	E.	57.5	1.0	2.8	. .	. .	. .	23.4	25.3	28.5	19 13.08	− 0.58	. .	+ 9.64	17 19 22.14	− 2.33
	45	B. A. C. 5886[2]	E.	. .	. .	8.3	11.0	13.6	16.0	18.5	. .	. .	19 13.48	− 0.58	. .	+ 9.64	17 19 22.54	− 2.33
	46	XVII, 7	E.	7.5	10.5	12.3	19.6	22.0	24.5	31.8	33.7	36.8	23 22.08	+ 0.15	. .	+ 9.64	17 23 31.87	− 2.67
	47	B. A. C. 5939	E.	14.2	16.8	18.5	24.6	26.9	28.9	35.2	36.7	39.4	28 26.80	− 0.29	. .	+ 9.63	17 28 36.14	− 2.17

10. Telescope micrometer reading increased five revolutions in reduction.
10, 30, 31. Bisections at sets B and D.
11, 43. Wire A used.
19. Bisections probably at set C.
23. Bisections at wires II and III.
34, 35. Bisections at wires V and VI.
36. Wire B used.
42. Telescope micrometer reading decreased one revolution in reduction.
43. Observed for Concordia.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	73.3	11 38 53.0	. .	+ 12.0	62 45 26.2	+ 0.5
2	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	73.3	65 33 0.8	. .	+ 2 6.9	116 41 28.9	−13.6
3	300 0	10 12.5	9.1	22.2	26.3	37	830	815	. .	. .	. .	73.3	59 56 43.7	. .	+ 1 40.0	111 4 44.9	−12.5
4	317 42	9.0	7.3	18.5	21.5	39	. .	190	. .	125	. .	73.3	42 15 1.2	. .	+ 52.7	93 22 15.1	+ 0.8
5	297 12	11.5	9.5	20.5	24.5	34	. .	. .	. .	115	090	73.3	62 43 46.4	. .	+ 1 52.1	113 51 59.7	−12.5
6	7 40	14.5	13.6	26.4	27.5	38	. .	615	. .	535	. .	73.3	352 16 59.1	. .	− 7.9	43 23 12.4	− 0.1
7	291 30	14.1	12.1	24.7	27.8	37	. .	150	. .	095	. .	73.3	68 26 35.5	. .	+ 2 26.0	119 35 22.7	−12.7
8	285 50	16.5	15.0	25.8	29.0	38	. .	170	. .	085	. .	73.3	74 6 52.8	. .	+ 3 21.4	125 16 35.4	−12.9
9	22 8	15.2	14.3	27.7	28.3	37	. .	910	. .	830	. .	73.3	337 48 49.4	. .	− 23.7	28 54 46.9	− 4.2
10	283 12	11.9	10.5	20.5	23.6	32	555	. .	. .	. .	510	73.3	76 44 38.8	. .	+ 4 1.8	127 55 1.8	−12.5
11	299 14	12.7	10.0	22.5	26.2	36	. .	520	. .	375	. .	73.3	60 39 50.3	55.5	+ 1 43.1	111 47 54.6	− 6.2
12	324 38	9 24.0	25.5	5.7	10.2	32	. .	810	. .	780	. .	72.0	35 17 9.8	73.3	+ 39.8	86 24 10.8	− 3.5
13	344 6	28.0	0.0	12.0	12.3	31	758	868	. .	. .	. .	72.0	15 48 58.8	. .	+ 15.7	66 55 35.7	. .
14	344 38	10 4.2	4.7	15.2	18.5	33	. .	. .	. .	266	272	72.0	15 17 27.0	81.8	+ 15.2	66 24 3.4	. .
15	345 24	2.7	0.6	12.9	17.5	39	. .	494	. .	428	. .	72.0	14 32 59.1	. .	+ 14.3	65 39 34.6	. .
16	353 12	2.5	0.5	9.7	14.0	34	. .	428	. .	280	. .	72.0	6 43 39.2	. .	+ 6.5	57 50 6.9	+ 1.1
17	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
18	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	83.2	. .	. .	. .
19	44 24	9.6	5.5	16.8	20.9	34	. .	730	. .	730	. .	72.0	315 31 21.4	70.0	− 55.4	6 36 47.2	+ 9.4
20	26 0	4.8	3.5	14.6	17.2	32	. .	. .	. .	602	508	72.0	333 55 16.4	. .	− 27.6	25 1 10.0	− 2.5
21	340 54	25.2	24.6	5.6	10.3	40	. .	012	. .	982	. .	72.0	19 3 0.3	69.5	+ 19.5	70 9 41.0	− 0.5
22	312 8	9.8	8.4	19.3	22.1	34	. .	350	. .	215	. .	71.4	47 47 45.5	66.5	+ 1 2.2	98 55 8.9	− 0.7
23	351 48	12.2	10.9	20.4	23.6	38	740	700	. .	. .	. .	71.4	8 8 55.3	. .	+ 8.3	59 15 24.8	− 3.1
24	284 46	12.5	9.3	20.8	24.1	34	. .	410	. .	320	. .	71.4	75 9 48.4	. .	+ 3 29.5	126 19 39.1	−16.7
25	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
26	23 44	6.7	6.0	17.5	18.3	32	. .	630	. .	590	. .	71.4	336 11 17.8	. .	− 24.9	27 17 14.1	+ 1.3
27	348 12	7.9	5.5	17.0	18.0	39	. .	690	. .	665	. .	71.4	11 45 5.6	. .	+ 11.8	62 51 38.6	− 0.6
28	291 20	9.5	7.7	18.9	23.0	34	. .	545	. .	500	. .	71.4	68 35 48.9	. .	+ 2 23.0	119 44 33.1	−15.0
29	300 58	11.3	10.3	20.5	24.0	29	. .	785	. .	700	. .	71.4	58 56 37.5	. .	+ 1 33.5	110 4 32.2	−13.2
30	24 2	5.7	4.5	15.7	15.3	38	100	. .	. .	. .	060	71.4	335 54 39.3	. .	− 25.3	27 0 35.2	+ 0.1
31	357 6	10.0	9.3	21.2	23.3	37	830	. .	. .	. .	815	71.4	2 50 40.9	. .	+ 2.8	53 57 4.9	− 3.3
32	20 18	11.5	11.1	23.1	23.3	32	. .	955	. .	930	. .	71.4	339 37 27.9	. .	− 21.0	30 43 28.1	− 0.8
33	344 12	7.2	5.8	16.5	18.8	35	. .	890	. .	850	. .	71.4	15 44 7.2	. .	+ 15.9	66 50 44.3	− 5.7
34	5 12	8.0	6.8	18.8	20.1	36	. .	. .	. .	900	880	71.4	354 44 24.5	. .	− 5.2	45 50 40.5	− 3.2
35	340 10	6.0	5.0	15.5	19.0	34	. .	. .	. .	530	500	71.4	19 45 45.9	. .	+ 20.3	70 52 27.4	− 6.6
36	281 14	10.5	10.0	22.2	24.0	32	. .	230	. .	200	. .	71.4	78 43 48.8	. .	+ 4 35.7	129 54 55.7	−14.4
37	355 2	4.0	3.5	14.0	17.9	34	. .	635	. .	560	. .	71.4	4 53 45.6	. .	+ 4.9	56 0 11.7	− 5.0
38	291 30	6.0	5.2	16.1	17.8	37	. .	. .	. .	025	945	71.4	68 26 38.7	. .	+ 2 22.2	119 35 22.1	−12.9
39	332 48	5.7	5.6	16.7	18.8	34	. .	075	. .	030	. .	71.4	27 7 38.9	. .	+ 29.0	78 14 29.1	− 7.8
40	310 44	6.7	6.0	17.3	20.1	32	. .	825	. .	775	. .	71.4	49 11 20.4	. .	+ 1 5.5	100 18 47.1	+ 2.4
41	299 16	12.5	11.6	22.0	25.5	32	. .	000	. .	972	. .	71.4	60 39 13.3	. .	+ 1 40.3	111 47 14.8	− 6.1
42	335 36	11.2	9.4	20.1	23.4	40	. .	880	. .	815	. .	71.4	24 21 12.0	. .	+ 25.7	75 27 58.9	+ 1.3
43	306 0	10.7	8.3	21.0	25.5	29	. .	. .	. .	790	770	71.4	53 52 5.1	. .	+ 1 17.5	104 59 43.8	. .
44	358 18	11.0	11.1	21.0	23.1	34	. .	. .	. .	605	. .	71.4	1 37 52.7	. .	+ 1.6	52 44 15.5	− 6.9
45	358 18	11.0	11.1	21.0	23.1	34	. .	. .	. .	. .	805	71.4	1 37 56.1	. .	+ 1.6	52 44 18.9	− 6.9
46	287 30	6.4	5.6	15.8	19.2	39	. .	. .	. .	540	540	71.4	72 27 2.9	. .	+ 2 57.3	123 36 21.4	− 9.5
47	334 18	10.3	9.5	19.5	23.5	36	. .	635	. .	580	. .	71.4	25 38 22.1	. .	+ 27.2	76 45 10.5	− 7.9

No	Barom.	At. Ther.
	in.	°
11	30.30	61.0
12	30.37	69.0
13	30.35	74.5
18	30.32	79.0
19	30.27	72.0
22	30.05	70.5

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
13	− 2.4	− 15 46.1	. .	− 15 48.5
14	− 2.3	+ 15 46.1	. .	+ 15 43.8
15	− 2.1	. .	0.0	− 2.1

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.		s.	h. m. s.	s.
June 17	1	XVII, 12	E.	43.5	46.2	47.9	54.4	56.6	58.7	5.3	7.0	9.8	34 56.60	+ 0.01		+ 9.63	17 35 6.24	— 2.41
	2	XVII, 13	E.	..	..	41.2	43.4	45.6	47.8	50.0	..	..	35 45.60	+ 0.03		+ 9.63	17 35 55.26	— 2.44
	3	B. A. C. 6052	E.	..	..	51.1	54.3	57.7	0.8	4.0	..	..	45 57.58	— 0.85		+ 9.63	17 46 6.36	— 2.59
	4	B. A. C. 6109	E.	56.5	0.2	2.4	11.1	14.0	16.9	25.6	27.7	31.3	56 13.97	— 0.73		+ 9.62	17 56 22.86	— 2.41
	5	B. A. C. 6129	E.	26.8	30.6	32.9	42.2	45.1	48.5	57.5	0.0	4.0	59 45.29	— 0.79		+ 9.62	17 59 54.12	— 2.43
	6	B. A. C. 6162	E.	17.8	21.2	23.4	31.6	34.5	37.5	45.8	48.0	51.6	3 34.60	— 0.69		+ 9.62	18 3 43.53	— 2.36
	7	Anonymous	E.	38.4	41.0	42.9	49.0	51.1	53.2	59.5	1.3	4.0	9 51.16	0.00		+ 9.62	18 10 0.78	. .
	8	δ Ursæ Minoris	E.	..	..	9.0	40.0	15.5	52.0	25.0	..	..	13 16.30	−10.44		+ 9.61	18 13 15.47	— 0.25
	9	1 Aquilæ	E.	1.4	4.0	5.6	11.8	13.8	15.9	22.0	23.6	26.2	28 13.81	— 0.09	+ 9.58	+ 9.60	18 28 23.32	+ 0.09
	10	α Lyræ	E.	17.9	21.0	23.0	30.9	33.5	36.0	44.0	45.9	49.3	32 33.50	— 0.60	+ 9.69	+ 9.60	18 32 42.50	— 0.07
	11	51 Cephei, S. P.	E.	..	..	31.0	48.0	4.0	23.0	38.5	..	..	40 4.90	+12.70		+ 9.60	6 40 27.24	+ 0.37
	12	β Lyræ	E.	4.0	7.1	9.0	16.2	18.7	21.2	28.6	30.3	33.5	45 18.73	— 0.52	+ 9.62	+ 9.60	18 45 27.81	+ 0.01
	13	ζ Persei	F.	..	..	58.8	1.2	3.6	6.0	8.3	..	..	46 3.58	— 0.61	+ 9.42	+ 9.43	3 46 12.40	0.00
	14	γ^1 Eridani	F.	46.9	49.6	51.3	57.6	59.6	1.6	8.0	9.8	12.2	51 59.62	— 0.20	+ 9.30	+ 9.43	3 52 8.85	+ 0.17
	15	γ Tauri	F.	15.4	18.0	19.6	26.0	28.1	30.2	36.6	38.0	40.7	12 28.07	— 0.44	+ 9.45	+ 9.42	4 12 37.05	— 0.02
	16	ϵ Tauri	F.	53.3	56.0	57.6	4.0	6.2	8.4	14.9	16.5	19.2	21 6.23	— 0.47	+ 9.44	+ 9.42	4 21 15.18	— 0.03
18	17	Sun S.	F.	..	..	..	..	..	..	..	..	..	. . .	. .	. .	. .		. .
	18	Sun II, N.	F.	39.1	42.1	43.6	50.3	52.5	54.8	1.5	3.0	6.0	48 52.54	— 0.51	. .	+ 9.37	5 49 1.40	−68.98
	19	δ Geminorum	F.	13.4	16.2	17.8	24.4	26.6	28.8	35.6	37.0	39.8	12 26.62	— 0.50	+ 9.34	+ 9.34	7 12 35.46	— 0.06
	20	α^2 Geminorum	F.	..	..	..	..	26.8	29.2	34.0	35.8	38.9	26 24.37	— 0.62	+ 9.41	+ 9.33	7 26 33.08	+ 0.16
	21	α Canis Minoris	F.	20.7	23.2	24.7	30.8	32.9	35.0	41.0	42.6	45.1	32 32.89	— 0.35	+ 9.37	+ 9.33	7 32 41.87	— 0.20
	22	Venus I, N.	F.	9.0	11.7	13.4	19.9	22.3	24.4	31.3	32.8	35.7	55 22.28	— 0.51	. .	+ 9.31	7 55 31.08	+ 0.45
	23	Venus S.	F.	..	..	..	..	..	..	..	..	..	. . .	. .	. .	. .		. .
	24	μ Leonis	F.	13.5	16.4	18.0	25.0	27.3	29.6	36.4	38.0	41.0	45 27.24	— 0.55	+ 9.29	+ 9.26	9 45 35.95	— 0.04
	25	Moon I, N.	F.	54.9	57.8	59.2	6.0	8.1	10.3	17.0	18.4	21.3	52 8.11	— 0.46	. .	+ 9.26	9 52 16.91	+66.11
	26	α Leonis	F.	18.5	21.1	22.7	28.9	31.0	33.2	39.4	41.0	43.6	1 31.04	— 0.41	+ 9.32	+ 9.26	10 1 39.89	— 0.16
	27	γ^1 Leonis	F.	..	..	..	..	55.2	57.5	1.8	3.4	6.0	12 53.03	— 0.49	+ 9.32	+ 9.25	10 13 1.79	— 0.09
	28	B. A. C. 4643	F.	18.2	43.2	55.3	49.6	6.4	24.4	17.6	30.4	52 0	46 6.34	— 5.15	. .	+ 9.15	13 46 10.34	— 8.79
	29	α Bootis	F.	34.8	37.6	39.2	45.6	47.9	50.0	56.7	58.3	0.8	9 47.88	— 0.41	+ 9.13	+ 9.14	14 9 56.61	+ 0.01
	30	ι Cassiopeæ, S. P.	F.	2.0	55.3	51.6	36.1	30.9	25.5	10.0	6.1	59.5	18 30.78	+ 1.20	. .	+ 9.14	2 18 41.12	+ 0.25
	31	5 Ursæ Minoris	F.	56.6	6.8	13.0	39.0	47.6	56.1	21.8	28.4	39.0	27 47.48	— 2.46	. .	+ 9.13	14 27 54.15	+ 0.04
	32	ϵ Bootis (R.)	F.	7.5	10.5	12.2	19.3	21.6	23.8	30.7	32.4	35.4	39 21.49	+ 0.30	. .	+ 9.13	14 39 31.01	— 0.03
	33	α^2 Libræ	F.	34.8	37.5	39.0	45.4	47.6	49.7	56.0	57.5	0.1	43 47.51	— 0.12	+ 9.01	+ 9.12	14 43 56.51	+ 0.10
	34	β Ursæ Minoris	F.	..	..	47.7	56.0	3.9	11.5	18.9	..	..	51 3.60	— 2.20	. .	+ 9.12	14 51 10.52	+ 0.03
	35	β Bootis	F.	49.5	53.0	54.9	3.0	5.6	8.4	16.6	18.6	21.9	57 5.72	— 0.67	. .	+ 9.12	14 57 14.17	— 0.05
	36	48 Cephei, S. P.	F.	..	..	28.0	18.5	9.1	0.0	50.8	..	..	4 9.28	+ 2.31	. .	+ 9.12	3 4 20.76	+ 0.17
	37	β Libræ	F.	54.3	56.9	58.4	4.5	6.6	8.7	14.8	16.3	19.0	10 6.61	— 0.17	+ 9.17	+ 9.11	15 10 15.55	— 0.09
	38	XV, 9	F.	..	..	36.7	38.9	41.0	43.3	45.5	..	..	18 41.08	— 0.07	. .	+ 9.11	15 18 50.12	— 2.00
	39	XV, 10	F.	..	..	..	..	..	..	..	19.3	22.5	19 7.27	+ 0.07	. .	+ 9.11	15 19 16.45	— 2.03
	40	XV, 17	F.	..	..	..	..	..	..	0.6	2.1	5.0	31 51.26	— 0.02	. .	+ 9.10	15 32 0.31	— 2.12
	41	XV, 24	F.	38.3	41.2	42.8	49.4	51.7	53.9	0.7	2.4	5.0	40 51.71	— 0.05	. .	+ 9.10	15 41 0 7.0	— 2.12
	42	B. A. C. 5259	F.	..	..	17.9	20.3	22.9	25.4	28.0	.	..	46 22.90	— 0.06	. .	+ 9.09	15 46 31.37	— 2.29
	43	δ Scorpii	F.	33.0	35.9	37.6	44.0	46.3	48.5	55.2	56.8	59.5	52 46.31	— 0.06	+ 9.06	+ 9.09	15 52 55.34	+ 0.04
	44	ϵ Ursæ Minoris	F.	..	..	31.0	46.0	1.5	..	31.5	..	..	59 1.27	— 4.20	. .	+ 9.06	16 59 6.07	— 0.17
	45	XVII, 21	F.	..	..	..	21.7	24.2	26.6	31.7	33.5	36.5	44 21.74	+ 0.05	. .	+ 9.04	17 41 30.83	— 2.64
	46	Anonymous	F.	53.0	56.7	58.8	7.6	10.5	13.5	22.0	24.4	27.9	55 10.49	— 0.75	. .	+ 9.04	17 55 18.75	— 2.43
	47	22 Camelopard., S. P.	F.	20.2	12.0	8.3	50.9	45.5	39.3	22.1	17.7	10.4	4 45.16	+ 1.30	. .	+ 9.03	6 4 55.55	+ 0.21
	48	δ Ursæ Minoris?	F.	..	..	7.5	41.0	16.0	50.5	24.5	..	..	14 15.90	— 9.61	. .	+ 9.02	18 14 15.31	— 0.37

3. Bisections at wires V and VI.
7. Observed for Echo. Wire A used.
25, 30, 31, 34, 36, 47. Bisections at sets B and D.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	301 2	10 5.0	7.2	13.5	16.5	37	. .	865	. .	850	. .	71.4	58 54 35.8	. .	+ 1 33.8	110 2 30.8	— 8.5
2	299 28	7.4	6.8	17.3	20.6	40	. .	. .	. .	315	280	71.4	60 29 16.0	. .	+ 1 39.9	111 37 17.1	— 8.5
3	11 50	5.8	5.8	17.0	17.5	32	. .	. .	. .	405	355	71.4	348 5 13.5	. .	— 12.0	39 11 22.7	— 7.6
4	6 32	4.7	5.3	15.5	17.2	33	110	090	. .	. .	. .	71.4	353 23 23.4	. .	— 6 6	44 29 38.0	— 8.1
5	9 30	5.9	6.8	17.0	17.8	36	. .	915	. .	919	. .	71.4	350 26 23 2	. .	— 9.6	41 32 34.8	— 8.2
6	4 28	9.9	10.0	21.0	22.1	31	. .	420	. .	380	. .	71.1	355 27 2.6	. .	— 1.5	46 33 19.3	— 8.3
7	303 2	3.5	3.1	14.0	17.5	33	. .	390	. .	310	. .	71.4	56 50 52.7	. .	+ 1 26.8	107 58 40.7	. .
8	47 38	11.0	10.7	22.0	23.0	36	600	. .	630	. .	595	71.4	312 18 23.1	. .	- 1 2.1	3 23 41.9	— 0.9
9	312 44	10.0	9.0	20.0	24.0	37	. .	240	. .	190	. .	71.4	47 12 31 3	. .	+ 1 1 1	98 19 53.9	— 0.1
10	359 42	8.1	8.0	20.0	19.0	34	. .	240	. .	195	. .	71.4	0 13 43.7	. .	+ 0.2	51 20 5.1	— 0.4
11	53 46	13.3	11.8	23.7	23.5	32	055	. .	015	. .	090	71.4	306 9 14.5	62.0	— 1 17.8	357 14 17.9	— 0.8
12	354 16	10.8	11.6	21.0	22.0	37	. .	700	. .	650	. .	71.4	5 40 39.2	. .	+ 5.7	56 47 6.1	+ 0.8
13	352 34	9 28.0	28.4	7.8	12.3	39	. .	. .	. .	822	826	68.6	7 22 57.5	. .	+ 7.6	58 29 26.3	— 3.6
14	307 12	9 26.7	26.9	6.4	12.3	37	. .	450	. .	466	. .	68.6	52 44 19 5	82.6	+ 1 11.4	103 51 52.1	— 2.1
15	336 22	10 3.1	3.0	14.4	18.6	34	. .	988	. .	950	. .	68.6	23 33 48.3	. .	+ 23.8	74 40 33.3	— 2.4
16	339 56	9 26.0	3.9	6.5	10.6	33	. .	166	. .	148	. .	68.6	19 59 15.0	. .	+ 19.9	71 5 56.1	— 0.6
17	344 12	28.8	0.0	8.3	11.7	33	. .	. .	858	. .	. .	68.6	15 43 26.1	. .	+ 15.3	66 50 2.6	. .
18	344 44	10 2.8	3.1	11.2	16.5	35	. .	. .	. .	456	480	68.6	15 11 55.1	86.5	+ 14.8	66 18 31.1	. .
19	343 16	7.4	8.0	17.4	23.5	37	. .	420	. .	426	. .	68.6	16 40 30.2	89.0	+ 16.2	67 47 7.6	— 0.2
20	353 12	2.2	2.1	14.2	19.0	34	. .	. .	. .	224	216	68.6	6 43 37.0	. .	+ 6.4	57 50 4.6	— 1.3
21	326 36	6.4	6.3	13.3	24.6	36	. .	164	. .	124	. .	68.6	33 20 9.1	. .	+ 35.5	84 27 5.8	— 4.0
22	343 38	6.6	5.6	17.0	21.3	41	100	. .	. .	. .	098	68.6	16 19 25.2	. .	+ 15.8	67 26 2.2	. .
23	343 38	6.6	5.6	17.0	21.3	41	. .	992	. .	000	. .	68.6	16 19 38.8	89.8	+ 15.8	67 26 15.8	. .
24	347 36	9.7	8.7	18.6	24.7	32	. .	. .	. .	786	798	68.6	12 17 21.1	. .	+ 11.7	63 23 54.0	— 1.3
25	338 54	9 26.7	28.3	7.0	11.4	34	802	. .	998	. .	088	68.6	21 1 41.6	. .	+ 20.7	72 8 23.5	. .
26	333 38	10 7.6	7.5	17.1	23.1	36	. .	234	. .	244	. .	68.6	26 18 17.7	90.3	+ 26.6	77 24 59.5	— 1.4
27	341 32	0.8	2.1	11.1	16.5	38	. .	. .	. .	090	086	68.6	18 24 34.3	90.5	+ 17.9	69 31 13.4	— 0.1
28	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		71.5	. .		. .
29	340 54	5.5	4.0	13.8	19.0	39	. .	. .	. .	. .	500	69.7	19 3 0.1	. .	+ 19.4	70 9 40.7	— 0.4
30	74 10	7.1	4.5	13.8	18.3	38	. .	750	. .	756	. .	69.7	285 46 48.1	. .	— 3 15.5	336 49 53.8	— 1.4
31	37 18	10.0	7.4	18.9	20.6	38	816	820	. .	830	836	69.7	322 38 53.0	. .	— 42.8	13 44 31.4	— 1.7
32	191 12	6.3	6.8	17.5	18.0	31	. .	238	. .	202	. .	69.7	168 42 54.0	. .	— 11.2	62 23 38.4	+ 0.3
33	305 32	5.0	2.8	13.5	19.5	33	. .	878	. .	886	. .	69.7	54 23 32.9	70.2	+ 1 18.4	105 31 12.5	0.0
34	35 42	3.0	29.2	11.0	13.0	35	. .	850	. .	840	. .	69.7	324 13 59.7	. .	— 40.4	15 19 40.5	— 2.5
35	1 56	7.8	7 5	16.4	21.0	36	. .	792	. .	794	. .	69.7	358 0 20.8	. .	— 1.9	49 6 40.1	— 1.0
36	63 44	3.5	1.6	11.7	14.7	33	920	910	. .	. .	. .	69.7	296 11 30.8	70.9	— 1 53.2	347 15 58.8	— 1.3
37	312 8	8.4	5.6	16.0	20.7	34	. .	652	. .	620	. .	69.7	47 47 47.0	. .	+ 1 1.7	98 55 9.9	+ 0.5
38	300 8	10.5	9.6	18.4	23.5	36	868	852	. .	. .	. .	69.7	59 48 23.3	. .	+ 1 36.0	110 56 20.5	—13.7
39	284 46	6.5	4.0	13.6	17.8	34	. .	. .	. .	924	974	69.7	75 9 49.6	. .	+ 3 28.1	126 19 38.9	—16.7
40	293 50	11.8	10.1	20.0	24.5	33	. .	. .	. .	650	622	69.7	66 5 35.7	. .	+ 2 5.9	117 14 2.8	—14.7
41	297 38	4.7	2.9	11.9	17.3	38	. .	230	. .	190	. .	69.7	62 18 38.1	. .	+ 1 46.7	113 26 46.0	—13.8
42	357 6	2.5	2.8	12.8	14.8	38	. .	. .	. .	330	338	69.7	2 50 39.9	. .	+ 2.8	53 57 3.9	— 3.1
43	293 48	6.7	4.0	13.9	18.7	34	. .	996	. .	994	. .	69.7	61 7 50.6	. .	+ 1 41.7	112 15 53.5	+ 2.2
44	43 16	4.2	1.2	14.4	13.4	36	. .	. .	264	. .	. .	69.7	316 40 7.6	65.0	— 53.4	7 45 35.4	— 0.4
45	287 0	2.6	1.6	10.6	14.0	34	. .	. .	. .	032	044	69.7	72 55 32.4	65 0	+ 3 2.0	124 4 55.6	—10.9
46	6 32	3.5	2.7	14.3	16.3	38	. .	900	. .	918	. .	69.7	353 24 49.3	. .	— 6.5	44 31 4.0	— 7.7
47	71 38	11.1	7.8	17.6	21.7	36	. .	072	. .	068	. .	69.7	288 18 10.8	. .	— 2 49.4	339 21 42.6	— 2.5
48	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .

No.	Barom.	At. Ther.
	in.	°
11	30.03	66.0
14	30.06	76.8
18	30.05	81.0
19	30.02	84.0
23	30.00	85.0
26	30.02	84.0
27	30.02	84.0
28	30.04	75.5
33	30.05	73.0
36	30.06	74.0
44	30.05	68.0
45	30.05	68.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
17	— 2.4	— 15 45.7	. .	— 15 48.1
18	— 2.3	+ 15 45.7	. .	+ 15 43.4
22	— 1.7	+ 6.8	. .	+ 5.1
23	— 1.7	— 6.8	0.0	— 8.5
25	—19 46.6	+ 15 11.6	. .	— 4 35.0

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	an wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
June 18	1	α Lyræ	F.	18.0	21.9	23.7	31.6	34.3	36.9	44.9	46.7	50.0	32 34.29	− 0.64	+ 8.95	+ 9.01	18 32 42.66	+ 0.08
	2	51 Cephei, S. P.	F.	. .	. .	30.5	49.0	6.0	24.5	43.5	. .	. .	40 6.70	+11.48	. .	+ 9.01	6 40 27.19	+ 0.29
	3	α Aurigæ.	S.	. .	. .	. .	. .	. .	20.3	26.0	28.2	31.9	7 14.32	− 0.81	. .	+ 8.65	5 7 22.16	− 0.08
19	4	Sun I	S.	. .	. .	40.4	42.7	45.0	47.2	49.3	. .	. .	50 44.92	− 0.51	. .	+ 8.62	5 50 23.03	+68.98
	5	α^2 Geminorum	S.	. .	. .	. .	25.2	27.7	30.0	34.9	36.8	39.7	26 25.25	− 0.61	+ 8.52	+ 8.57	7 26 33.21	+ 0.29
	6	α Canis Minoris	S.	21.4	24.0	25.4	31.7	33.8	35.9	42.0	43.5	46.0	32 33.74	− 0.36	+ 8.53	+ 8.57	7 32 41.95	− 0.12
	7	β Geminorum	S.	13.8	16.9	8.6	25.5	27.9	30.2	37.3	39.0	41.8	37 27.89	− 0.56	+ 8.61	+ 8.57	7 37 35.90	− 0.07
	8	β Ursæ Minoris.	S.	. .	. .	48.7	56.4	3.9	11.9	19.8	. .	. .	51 4.14	− 2.19	. .	+ 8.32	14 51 10.27	− 0.16
	9	48 Cephei, S. P.	S.	54.0	47.3	28.8	19.0	10.3	0.7	51.7	33.6	26.0	4 10.16	+ 2.25	. .	+ 8.32	3 4 20.73	+ 0.05
	10	μ^1 Bootis	S.	. .	. .	. .	. .	. .	. .	48.8	50.7	53.9	19 38.42	− 0.67	+ 8.36	+ 8.31	15 19 46.06	− 0.06
	11	B. A. C. 5113	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	12	XV, 18	S.	24.0	27.3	29.1	37.2	39.8	42.6	50.4	52.3	55.6	32 39.81	− 0.01	. .	+ 8.30	15 32 48.10	− 2.32
	13	XV, 23	S.	43.1	46.0	47.6	51.9	54.1	. .	. .	. .	. .	39 56.26	− 0.16	. .	+ 8.30	15 40 4.40	− 2.09
	14	B. A. C. 5271	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	15	β^1 Scorpii	S.	. .	. .	56.3	58.8	0.8	2.9	5.3	. .	. .	58 0.82	− 0.17	+ 8.28	+ 8.29	15 58 8.94	+ 0.04
20	16	12 Canum Venat.	Sk.	46.7	50.0	51.9	59.8	2.4	5.0	12.9	15.0	18.2	50 2.43	− 0.70	+ 7.71	+ 7.75	12 50 9.48	+ 0.04
	17	θ Virginis	Sk.	7.2	9.8	11.3	17.4	19.4	21.5	27.7	29 2	31.5	3 19.44	− 0.33	+ 7.76	+ 7.75	13 3 26.86	− 0.05
	18	Polaris, S. P.	Sk	. .	. .	30.0	4.5	38.5	. .	. .	. .	. .	11 38.67	+20.42	. .	+ 7.75	1 12 6.84	− 0.96
	19	α Virginis	Sk.	14.8	17.5	19.0	25.1	27.3	29.3	35.4	37.0	39.8	18 27.24	− 0.29	+ 7.77	+ 7.75	13 18 34.70	− 0.04
21	20	Moon I, N.	E.	44.0	46.8	48.3	54.6	56.6	58.7	4.9	6.4	9.0	9 56.59	− 0.46	. .	+ 6.91	12 10 3.04	+61.17
	21	η Virginis	E.	9.9	12.5	14.0	20.0	22.1	24.2	30.3	31.8	34.3	13 22.12	− 0.45	+ 6.89	+ 6.91	12 13 28.58	0.00
	22	12 Canum Venat.	E.	47.6	50.9	52.8	0.7	3.4	6.0	13.7	15.7	19.0	50 3.31	− 0.75	+ 6.87	+ 6.89	12 50 9.45	+ 0.02
	23	θ Virginis	E.	. .	. .	. .	20.4	22.4	24.5	28.6	30.1	32.8	3 20.40	− 0.43	+ 6.89	+ 6.88	13 3 26.85	− 0.05
	24	Polaris, S P.	E.	. .	. .	37.0	11.0	44.0	8.0	52.5	. .	. .	11 44.50	+18.93	. .	+ 6.88	1 12 10.31	+ 1.67
	25	α Virginis	E.	15.8	18.4	19.9	26.1	28.2	30.3	36.5	38.0	40.7	18 28.21	− 0.40	+ 6.90	+ 6.87	13 18 34.68	− 0.05
	26	η Tauri	F.	40.1	42.9	44.7	51.4	53.6	55.8	2.5	4.2	7.0	39 53.58	− 0.61	+ 6.55	+ 6.57	3 39 59.54	− 0.02
	27	γ^1 Eridani	F.	50.0	52.6	54.3	0.5	2.6	4.9	11.0	12.6	15.2	52 2.63	− 0.41	+ 6.58	+ 6.56	3 52 8.78	+ 0.02
	28	γ Tauri	F.	18.6	21.2	22.7	29.0	31.1	33.2	39.8	41.2	43.9	12 31.19	− 0.55	+ 6.53	+ 6.55	4 12 37.19	+ 0.03
	29	ε Tauri	F.	56.4	59.0	0.7	7.0	9.0	11.5	18.0	19.7	22.0	21 9.26	− 0.57	+ 6.59	+ 6.55	4 21 15.24	− 0.05
	30	α Tauri	F.	. .	25.0	26.8	31.0	35.1	39.5	43.9	. .	48.0	28 35.24	− 0.56	+ 6.49	+ 6.55	4 28 41.23	+ 0.04
	31	β Orionis.	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
22	32	Sun I, N.	F.	2.6	5.6	7.1	13.9	16.0	18.4	25.0	26.8	29.5	3 16.10	− 0.61	. .	+ 6.50	6 3 21.99	. .
	33	Sun II, S.	F.	20.7	23.4	25.0	31.7	34.0	36.3	43.0	44.7	47.5	5 34.03	− 0.61	. .	+ 6.50	6 5 39.93	. .
	34	α^2 Geminorum	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	35	β Geminorum	F.	16.2	19.2	21.0	27.7	30.0	32.4	39.3	41.0	44.0	37 30.09	− 0.64	+ 6.50	+ 6.46	7 37 35.91	− 0.07
	36	Mercury I, N.	F.	28.4	31.1	32.8	39.5	41.6	44.0	50.7	52.0	54.9	52 41.67	− 0.59	. .	+ 6.45	7 52 47.53	+ 0.26
	37	Mercury S.	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	38	ι Ursæ Majoris	F.	. .	. .	. .	29.2	32.0	34.9	41.4	43.6	47.4	50 28.94	− 0.88	. .	+ 6.44	8 50 34.50	+ 0.18
	39	Moon I, N.	F	51.8	54.4	56.0	2.3	4.3	6.4	12.6	14.2	16.8	53 4.31	− 0.40	. .	+ 6.31	12 53 10.22	+61.17
	40	Polaris, S. P.	F.	. .	. .	33.5	10.0	. .	16.5	50.0	. .	. .	11 42.70	+17.20	. .	+ 6.30	1 12 6.20	− 3.32
	41	α Virginis	F.	16.4	19.0	20.4	26.7	28.8	30.9	37.1	38.7	41.2	18 28.80	− 0.37	+ 6.28	+ 6.29	13 18 34.72	− 0.01
	42	η Ursæ Majoris	F.	12.0	16.0	18.4	28.0	31.2	34.4	43.9	46.2	50.2	42 31.14	− 0.80	. .	+ 6.28	13 42 36.62	+ 0.06
	43	B. A. C. 4643	F.	. .	. .	31.4	50.7	8.0	26.0	43.6	. .	. .	46 7.94	− 3.40	. .	+ 6.28	13 46 10.82	− 8.12
	44	η Bootis	F.	24.0	26.9	28.3	34.8	37.0	39.1	45.8	47.3	50.0	48 37.02	− 0.52	+ 6.24	+ 6.28	13 48 42.78	− 0.01
	45	α Draconis (R)	F.	26.0	32.0	35.6	50 0	54.6	59.7	14.2	17.8	23.9	0 54.88	+ 0.46	. .	+ 6.27	14 1 1.61	− 0.07
	46	α Bootis (R.)	F.	. .	. .	15.8	47.9	50.0	52.2	54.2	. .	. .	9 50.02	+ 0.26	. .	+ 6.27	14 9 56.55	− 0.02

3, 8, 9, 14. Bisections at sets B and D.
39. Telescope micrometer reading decreased five revolutions in reduction.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	359 42	10 5.4	3.5	15.9	16.3	34	. .	500	. .	496	. .	69.7	0 13 42.8	. .	+ 0.2	51 20 4.2	— 1.0
2	53 46	3.6	2.0	13.9	13.4	32	. .	632	626	620	. .	69.7	306 9 11.7	64.5	— 1 17.5	357 14 15.4	— 3.1
3	6 54	11.1	10.9	23.1	27.8	33	772	. .	. .	. .	. .	70.6	353 1 40.3	. .	— 6.7	41 7 54.8	+ 1.4
4	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
5	353 12	1.5	2.4	11.7	17.1	34	. .	. .	. .	104	152	70.6	6 43 36.5	. .	+ 6.4	57 50 4.1	— 1.9
6	326 36	4.4	6.2	14.3	20.8	36	. .	224	. .	188	. .	70.6	33 20 10.8	. .	+ 35.8	84 27 7 8	— 1.9
7	349 22	9 29.6	2.1	9.9	14.8	34	. .	293	. .	247	. .	70.6	10 33 36.5	85.5	+ 10.2	61 40 7.9	— 0.6
8	35 42	13.3	10.3	21.2	24.0	37	140	. .	. .	. .	042	70.3	324 14 0.1	71.7	— 40.3	15 19 41.0	— 1.8
9	63 44	10 6.7	0.0	16.6	21.2	33	636	. .	. .	. .	610	70.3	296 11 30.2	. .	— 1 53.3	347 15 58.1	— 1.8
10	358 52	22.8	16.8	3.0	6.8	36	. .	. .	. .	156	946	70.3	1 4 24.8	. .	+ 1.1	52 10 47.1	— 1.2
11	9 12	10.0	9.1	21.5	24.8	38	. .	. .	. .	960	930	70.3	350 44 58.2	. .	— 9.1	41 51 10.3	0.0
12	281 32	13.0	11.5	21.5	26.5	34	. .	. .	. .	090	150	70.3	78 23 45.1	71.9	+ 4 25.2	129 34 31.5	−16.9
13	300 58	9.0	8.3	17.2	23.2	29	. .	934	. .	. .	. .	70.3	58 56 37.0	. .	+ 1 32.7	110 4 30.9	−13.2
14	3 50	6.2	7.6	17.1	20.1	33	115	. .	. .	. .	. .	70.3	356 5 24.4	. .	— 3.8	47 11 41.8	— 2.0
15	301 36	6.5	5.5	15.4	20.4	34	. .	875	. .	. .	. .	70.3	58 19 50.2	71.0	+ 1 30.6	109 27 42.0	— 1.3
16	0 2	9 26.5	26.2	5.7	6.4	34	. .	559	. .	512	. .	71.6	359 53 36.2	. .	— 0.1	40 59 57.3	+ 0.5
17	316 12	29.3	26.6	5.6	10.4	39	. .	. .	. .	132	149	71.6	43 44 48.5	. .	+ 53.9	94 52 3.6	— 1.6
18	52 22	10 13.8	10.5	20.2	23.0	30	. .	843	830	800	809	71.6	307 32 54.6	. .	— 1 13.2	358 38 2.6	— 0.6
19	310 32	8 8.3	6.8	14.7	19.6	35	. .	069	. .	050	. .	71.6	49 22 55.0	69.0	+ 1 5.7	100 30 21.9	+ 0.7
20	322 32	10 14.8	14.2	25.5	27.6	34	. .	985	220	620	. .	71.4	37 23 51.2	. .	+ 42.4	88 30 54.8	. .
21	321 6	16.6	15.0	24.3	29.0	38	. .	. .	. .	660	620	71.4	38 50 59.0	76.5	+ 44.7	89 58 4.9	+ 0.4
22	0 2	12.8	12.0	23.5	25.8	33	. .	420	. .	320	. .	71.4	359 53 35.5	. .	— 0.1	50 59 56.6	— 0.1
23	316 12	18.5	16.5	28.5	1.8	37	. .	. .	. .	995	975	71.4	43 44 51.5	. .	+ 53.4	94 52 6.1	+ 1.0
24	52 22	14.0	11.5	23.3	24.2	30	680	. .	650	. .	710	71.4	307 32 53.5	. .	— 1 12.5	358 38 2.2	— 0.9
25	310 34	17.0	15.2	23.8	29.1	38	. .	425	. .	365	. .	71.4	49 22 54.9	73.5	+ 1 5.1	100 30 21.2	+ 0.1
26	344 46	11.6	11.0	20.3	27.2	36	. .	966	. .	976	. .	70.0	15 10 28.1	82.5	+ 14.9	66 17 4.2	— 1.8
27	307 12	10.7	9.5	19.8	27.2	36	. .	526	. .	470	. .	70 0	52 44 19.9	82.9	+ 1 12.1	103 51 53.2	— 0.1
28	336 22	12.4	9.4	20.2	27.2	34	. .	. .	. .	536	. .	70.0	23 33 50.8	. .	+ 25.9	74 40 35.9	+ 0.6
29	339 56	11.4	10.2	18.9	25.9	32	. .	340	. .	350	. .	70.0	19 59 16 3	. .	+ 19.9	71 5 57.4	+ 1.0
30	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
31	312 42	14.3	12.5	24.2	0.2	32	. .	658	. .	658	. .	70.0	47 13 24.6	89.1	+ 58.7	98 20 44.5	— 2.3
32	344 46	11.5	11.5	22.2	24.1	36	914	914	. .	. .	. .	70.0	15 10 26.7	. .	+ 14.7	66 17 2.6	. .
33	344 14	7.5	9.2	17.2	20.8	35	. .	. .	. .	316	298	70.0	15 41 59.2	92.0	+ 15.2	66 48 35.6	. .
34	353 12	14.0	12.0	22.9	28.1	33	. .	. .	. .	516	530	70.0	6 43 37.6	. .	+ 6.3	57 50 5.1	— 1.1
35	349 22	13.2	13.7	22.3	27.4	33	. .	584	. .	574	. .	70.0	10 33 37.8	94.8	+ 10 0	61 40 9.0	+ 0.4
36	343 10	21.2	21.0	0.4	5.3	38	226	. .	. .	. .	298	70.0	16 46 57.5	. .	+ 16.2	67 53 34.9	. .
37	343 10	21.2	21.0	0.4	5.3	38	. .	670	. .	776	. .	70.0	16 47 4.4	. .	+ 16.2	67 53 41.8	. .
38	9 34	18.6	18.4	28.6	1.7	32	. .	. .	. .	700	724	70.0	350 21 30.5	94.8	— 9.1	41 27 42 6	— 1.8
39	316 46	19.1	18.5	27.0	2.5	33	. .	828	040	412	. .	70.5	43 8 19.2	81.8	+ 51.4	94 15 31.8	. .
40	52 22	18.0	17.1	28.5	0.0	30	270	290	. .	288	280	70.5	307 32 51.7	. .	— 1 11.5	358 38 1.4	— 1.7
41	310 34	18.2	15.0	25.0	1.3	38	. .	546	. .	478	. .	70.5	49 22 56.8	. .	+ 1 4.1	100 30 22.1	+ 1.0
42	10 58	19.8	18.2	29.2	2.2	31	. .	218	. .	216	. .	70.5	348 57 8.1	. .	— 10.8	40 3 18.5	— 1.5
43	44 22	13.8	10.6	21.2	24.7	24	546	. .	564	. .	551	70.5	315 31 18.5	. .	— 54.2	6 36 45.5	+ 9.9
44	340 4	17.2	14.5	22.7	27.2	33	.	064	. .	068	. .	70.5	19 51 31.6	. .	+ 20.0	70 58 12.8	0.0
45	153 52	14.3	14.7	23.5	28.4	37	. .	016	. .	982	. .	70.5	206 4 46.2	. .	+ 27.1	25 1 7.9	— 3.6
46	199 0	21.6	18.3	27.8	29.9	38	. .	454	. .	450	. .	70.5	160 56 57.9	78.0	— 19.1	70 9 42.4	+ 1.7

No.	Barom.	At. Ther.
	in.	°
2	30.08	67.5
7	30.083	81.0
15	30.10	73.0
19	30.17	71.2
21	30.14	76.5
25	30.14	75.0
26	30.19	76.0
31	30.19	81.0
33	30.19	82.0
35	30.18	87.0
38	30.18	98.5
39	30.12	82.0
46	30.13	30.5

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
20	−32 49.6	+ 14 50.2	. .	− 17 59.4
32	— 2.3	+ 15 46.5	. .	+ 15 42.2
33	— 2.3	− 15 46.5	. .	− 15 48.8
36	— 2.7	+ 3.5	. .	+ 0.8
37	— 2.7	— 3.5	+ 0.1	— 6.1
39	−36 55.3	+ 14 48.6	. .	− 22 6.7

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
June 22	1	5 Ursæ Minoris .	F.	. .	. .	. .	. .	. .	. .	24.0	30.4	41.7	27 49.76	− 2.00	. .	+ 6.27	14 27 54.03	+ 0.20
	2	ε Bootis . . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	3	α^2 Libræ . . .	F.	37.8	40.4	42.0	48.4	50.5	52.6	58.8	0.5	3.0	43 50.44	− 0.35	+ 6.30	+ 6.27	14 43 56.36	− 0.04
	4	48 Cephei, S. P. .	F.	. .	. .	31.4	22.0	12.5	3.4	54.5	. .	. .	4 12.76	+ 1.59	. .	+ 6.26	3 4 20.61	− 0.34
	5	μ^1 Bootis . . .	F.	25.0	28.3	30.2	38.0	40.6	43.2	50.8	52.8	56.0	19 40.54	− 0.67	+ 6.22	+ 6.25	15 19 46.12	+ 0.02
	6	B. A. C. 5091 .	F.	. .	. .	. .	. .	. .	. .	. .	. .	58.6	20 30.96	− 1.16	. .	+ 6.25	15 20 36.05	− 3.24
	7	XV, 17. . . .	F.	40.7	43.5	45.3	52.3	54.6	56.9	3.8	5.4	8.3	31 54.53	− 0.29	. .	+ 6.24	15 32 0.58	− 2.12
	8	B. A. C. 5249 .	F.	16.3	22.0	25.3	38.9	43.3	48.0	1.3	4.7	10.1	44 43.32	− 1.13	. .	+ 6.23	15 44 48.42	− 3.24
	9	B. A. C. 5252 .	F.	. .	. .	. .	. .	. .	. .	. .	50.8	53.5	45 30.46	− 0.54	. .	+ 6.23	15 45 46.05	− 2.08
	10	ε Coronæ Borealis .	F.	5.0	7.9	9.7	16.5	18.8	21.2	28.0	29.7	32.6	52 18.82	− 0.58	+ 6.29	+ 6.23	15 52 24.47	− 0.06
	11	XVI, 4 . . .	F.	49.2	50.9	53.4	57.6	59.9	2.0	4.3	9.0	10.4	12 59.86	− 0.31	. .	+ 6.22	16 13 5.77	− 2.28
	12	XVI, 6. . . .	F.	19.3	22.2	23.8	31.3	33.3	35.7	42.7	44.4	47.3	19 33.33	− 0.29	. .	+ 6.22	16 19 39.26	− 2.39
	13	B. A. C. 5541 .	F.	16.8	19.9	21.7	28.9	31.2	33.6	40.7	42.6	45.5	28 31.21	− 0.61	. .	+ 6.22	16 28 36.82	− 2.25
	14	XVI, 19 . . .	F.	15.0	17.9	19.4	26.0	28.3	30.5	36.9	38.5	41.2	39 28.19	− 0.33	. .	+ 6.21	16 39 34.07	− 2.33
	15	XVI, 21 . . .	F.	17.6	20.4	22.0	. .	. .	. .	. .	. .	. .	40 31.02	− 0.31	. .	+ 6.21	16 40 36.92	− 2.39
	16	γ^2 Sagittarii . .	F.	25.5	28.4	30.0	37.3	39.5	42.0	49.2	50.7	53.9	57 39.61	− 0.28	+ 6.26	+ 6.18	17 57 45.51	− 0.07
	17	δ Ursæ Minoris. .	F.	. .	. .	. .	. .	. .	. .	. .	1.0	44.0	13 17.00	− 7.30	. .	+ 6.17	18 13 15.87	+ 0.27
	18	κ Aquilæ. . . .	F.	51.0	53.5	55.0	1.2	3.3	5.4	11.6	13.0	15.6	30 3.29	− 0.38	+ 6.08	+ 6.13	19 30 9.04	+ 0.09
	19	α Persei . . .	E.	. .	. .	8.3	11.4	14.5	17.7	20.8	. .	. .	15 14.54	− 1.04	. .	+ 5.91	3 15 19.41	− 0.07
	20	δ Persei . . .	E.	34.0	37.9	40.0	49.2	52.1	55.1	4.2	6.4	10.2	33 52.12	− 1.00	. .	+ 5.91	3 33 57.03	+ 0.13
	21	η Tauri . . .	E.	40.9	43.7	45.4	52.3	54.4	56.6	3.2	5.0	7.9	39 54.38	− 0.69	+ 5.86	+ 5.90	3 39 59.59	+ 0.04
	22	ζ Persei . . .	E.	53.0	56.0	57.8	5.0	7.4	9.8	17.0	18.8	21.7	46 7.39	− 0.77	+ 5.91	+ 5.90	3 46 12.52	− 0.02
	23	α Tauri . . .	E.	23.1	25.8	27.4	33.8	35.9	38.1	44.5	46.0	48.6	28 35.91	− 0.63	+ 5.92	+ 5.89	4 28 41.17	− 0.05
	24	β Orionis . . .	E.	10.7	13.3	15.0	21.0	23.2	25.2	31.3	32.9	35.4	8 23.11	− 0.47	+ 5.88	+ 5.88	5 8 28.52	0.00
23	25	Sun I, N. . . .	E.	12.9	15.5	17.2	23.8	26.0	28.2	35.0	36.7	39.6	7 26.10	− 0.70	. .	+ 5.87	6 7 31.27	. .
	26	Sun II, S. . . .	E.	30.6	33.4	35.0	41.6	43.9	46.2	52.8	54.5	57.4	9 43.93	− 0.70	. .	+ 5.87	6 9 49.10	. .
24	27	Moon I, N. . .	Sk.	7.8	10.8	12.2	16.4	20.8	25.0	29.5	31.1	33.9	22 20.83	− 0.08	. .	+ 5.14	14 22 25.89	+63.63
	28	ε Bootis . . .	Sk.	12.6	15.5	17.2	24.0	26.3	28.6	35.7	37.3	40.0	39 26.36	− 0.51	+ 5.12	+ 5.13	14 39 30.98	− 0.01
	29	α^2 Libræ . . .	Sk.	38.5	41.3	43.0	49.2	51.4	53.6	59.9	1.5	4.0	43 51.38	− 0.07	+ 5.07	+ 5.13	14 43 56.44	+ 0.05
	30	β Bootis . . .	Sk.	53.5	57.0	59.0	7.2	9.9	12.5	20.6	22.5	25.9	57 9.79	− 0.72	. .	+ 5.12	14 57 14.19	+ 0.04
	31	β Libræ (R) . . .	Sk.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	32	XV, 9	Sk.	31.9	34.6	36.4	43.0	45.2	47.3	53.8	55.5	58.2	18 45.10	− 0.02	. .	+ 5.11	15 18 50.19	− 1.99
	33	B. A. C. 5116 .	Sk.	. .	. .	17.0	21.5	25.9	30.3	34.7	. .	. .	25 25.88	− 1.40	. .	+ 5.11	15 25 29.59	− 3.12
	34	XV. 20	Sk.	54.0	55.9	0.6	3.0	5.4	7.6	10.0	14.6	16.4	34 5.28	+ 0.07	. .	+ 5.11	15 34 10.46	− 2.16
	35	ε Serpentis . . .	Sk.	16.9	19.5	21.0	27.3	29.3	31.3	37.5	39.0	41.6	44 29 27	− 0.26	+ 5.20	+ 5.10	15 44 34.11	− 0.10
	36	B. A. C. 5271 .	Sk.	0.4	3.8	6.0	14.4	17.2	20.0	28.4	30.4	33.9	48 17.17	− 0.75	. .	+ 5.10	15 48 21.52	− 2.36
	37	B. A. C. 5319 .	Sk.	56.7	59.6	1.6	9.2	11.3	13.8	21.1	23.0	26.0	56 11.37	− 0.60	. .	+ 5.10	15 56 15.87	− 2.27
	38	B. A. C. 5388 .	Sk.	28.7	32.5	34.5	43.4	46.3	49.1	57.8	0.0	3.5	4 46.20	− 0.81	. .	+ 5.10	16 4 50.49	− 2.45
	39	B. A. C. 5432 .	Sk.	40.7	43.8	45.5	52.9	55.4	57.9	5.2	7.0	10.1	9 55.39	− 0.60	. .	+ 5.10	16 9 59.89	− 2.25
	40	XVI, 9	Sk.	32.4	35.2	37.0	43.8	46.3	48.5	55.3	57.2	0.0	22 46.19	+ 0.04	. .	+ 5.09	16 22 51.32	− 2.37
	41	B. A. C. 5549 .	Sk.	17.0	21.0	23.3	32.9	36.2	39.2	48.9	51.2	55.2	29 36.10	− 0.93	. .	+ 5.09	16 29 40.26	− 2.61
	42	XVI, 17 . . .	Sk.	50.8	53.7	55.5	2.6	4.9	7.3	14.0	15.8	18.7	37 4.81	+ 0.05	. .	+ 5.08	16 37 9.94	− 2.46
	43	B. A. C. 5677 .	Sk.	16.0	18.8	20.4	27.2	29.4	31.7	38.5	40.2	42.9	46 29.46	− 0.48	. .	+ 5.08	16 46 34.06	− 2.22
	44	d Herculis . . .	Sk.	40.0	43.4	45.3	52.6	55.0	57.6	4.9	6.9	10.0	56 55.08	− 0.60	. .	+ 5.07	16 56 59.55	+ 0.12
	45	B. A. C. 5900 .	Sk.	7.4	10.1	11.7	18.2	20.4	22.6	29.2	30.8	33.7	21 20.46	− 0.42	. .	+ 5.06	17 21 25.10	− 2.23
	46	ω Draconis (R.) .	Sk.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	47	Anonymous . .	Sk.	56.9	0.6	2.5	11.7	14.6	17.4	26.0	28.4	32.0	55 14.46	− 0.81	. .	+ 5.05	17 55 18.70	− 2.46
	48	μ^1 Sagittarii . .	Sk.	58.2	0.8	2.5	9.2	11.3	13.5	20.0	21.6	24.5	6 11.29	− 0.02	+ 4.97	+ 5.05	18 6 16.32	+ 0.08
	49	d Ursæ Minoris . .	Sk.	. .	. .	13.0	16.5	22.5	57.0	31.0	. .	. .	13 22.00	−11.24	. .	+ 5.04	18 13 15.80	+ 0.30

27. Bisections at wires III–V. Revolutions ambiguous, possibly 33.
46. Bisections at wires C_3, C_5, and D_3.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	37 18	10 23.0	18.3	29.2	2.9	37	. .	952	. .	900	. .	70.5	322 38 52.7	. .	− 42.3	13 44 31.6	− 0.8
2	348 38	20.7	18.0	28.2	2.2	31	. .	010	. .	960	. .	70.5	11 17 4.4	. .	+ 11.1	62 23 36.7	− 1.8
3	305 33	8 20.8	18.9	28.0	3.7i	36	. .	. .	. .	802	794	70.5	54 23 33.9	. .	+ 1 17.3	105 31 12.4	− 0.1
		12 21.2	19.4	28.1	3.0(												
4	63 44	10 16.2	14.0	25.4	28.2	32	000	980	. .	. .	. .	70.5	296 11 28.9	76.0	− 1 52.5	347 15 57.6	− 1.9
5	358 52	13.4	11.9	24.1	26.1	36	742	730	. .	. .	. .	70.5	1 4 26.2	. .	+ 1.0	52 10 48.4	+ 0.7
6	24 50	5.9	3.8	15.3	15.7	37	. .	. .	. .	570	. .	70.5	335 6 31.2	. .	− 25.8	26 12 26.6	+ 2.9
7	293 50	14.5	12.6	23.4	26.5	33	. .	572	. .	546	. .	70.5	66 5 37.8	74.3	+ 2 4.9	117 14 3.9	−14.9
8	24 2	13.2	11.2	23.2	25.1	37	582	614	. .	. .	. .	70.5	335 54 39.4	. .	− 24.9	27 0 35.7	+ 1.3
9	342 24	16.3	14.4	24.5	29.6	34	. .	. .	. .	606	618	70.5	17 31 56.6	. .	+ 17.6	68 38 35 4	− 4.8
10	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .		. .	. .		. .
11	297 12	17.6	14.3	25.2	2.2	34	. .	. .	. .	140	180	70.5	62 43 50.3	. .	+ 1 47.8	113 51 59.3	−12.8
12	292 4	21.5	19.7	29.0	2.1	33	. .	180	. .	086	. .	70.5	67 51 37.6	. .	+ 2 16.2	119 0 15.0	−13.2
13	351 50	21.2	18.7	0.0	2.3	41	. .	170	. .	140	. .	70.5	8 7 40.7	. .	+ 8.0	59 14 9.9	− 4.5
14	301 12	17.3	17.2	26.9	29.9	36	248	232	. .	. .	. .	70.5	58 44 22.0	. .	+ 1 31.8	109 52 15.0	−11.1
15	296 46	20.1	17.9	28.2	0.8	34	. .	. .	. .	374	370	70.5	63 9 55.5	73.0	+ 1 50.0	114 18 6.7	−11.6
16	290 40	15.0	13.5	20.5	26.8	37	. .	786	. .	770	. .	70.5	69 16 42.0	71.0	+ 2 27.1	120 25 30.3	− 0.6
17	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .		. .	. .		. .
18	313 44	20.6	19.8	29.5	3.0	30	. .	870	. .	860	. .	70.5	46 11 3.1	. .	+ 58.7	97 18 23.0	+ 1.0
19	10 26	18.9	18.8	29.7	1.9	31	. .	. .	. .	420	360	69.7	349 29 9.9	87.0	− 10.1	40 35 21.0	− 2.3
20	8 26	19.7	19.4	0.0	1.8	37	. .	800	. .	760	. .	69.7	351 30 48.1	. .	− 8.1	42 37 1.2	− 2.6
21	344 46	23.3	22.0	2.3	4.2	36	. .	280	. .	240	. .	69.7	15 10 27.3	. .	+ 14.7	66 17 3.2	− 2.8
22	352 34	18.5	18.0	28.3	0.5	38	. .	780	. .	730	. .	69.7	7 23 1.4	. .	+ 7.0	58 29 29.6	− 0.2
23	337 18	19.8	20.5	28.7	1.8	34	. .	300	. .	260	. .	69.7	22 37 54.2	92.5	+ 22.5	73 44 37.9	− 0.1
24	312 42	11.7	11.7	22.9	26.6	32	. .	945	. .	915	. .	69.7	47 13 26.4	. .	+ 57.9	98 20 45.5	− 1.1
25	344 46	14.6	12.3	22.5	26.2	39	300	295	. .	. .	. .	69.7	15 11 4.5	98.0	+ 14.5	66 17 40.2	. .
26	344 14	13.2	11.6	21.0	24.7	37	. .	. .	. .	760	720	69.7	15 42 40.0	. .	+ 15.0	66 49 16.2	. .
27	305 54	18.1	16.9	23.5	29.0	34	654	. .	845	. .	972	68.6	54 1 58.0	81.0	+ 1 15.6	105 9 34.8	. .
28	348 38	22.5	20.4	0.0	1.1	30	. .	981	. .	947	. .	68.6	11 17 3.2	. .	+ 11.0	62 23 35.4	− 1.8
29	305 32	14.6	14.3	21.1	27.2	33	. .	382	. .	280	. .	68.6	54 23 32.5	. .	+ 1 16.7	105 31 10.4	− 2.1
30	1 56	20.0	19.9	27.4	0.1	36	. .	061	. .	072	. .	68.6	358 0 19.8	. .	− 1.9	49 6 39.1	− 0.9
31	227 44	21.9	18.5	27.4	0.0	35	545	. .	. .	469	470	68.6	132 12 11.1	. .	− 1 0.8	98 55 10.9	+ 1.7
32	300 8	20.9	20.8	27.8	2.5	36	. .	345	. .	240	. .	68.6	59 48 24.0	. .	+ 1 34.6	110 56 19.8	−14.0
33	23 44	16.1	15.7	24.7	25.5	32	. .	. .	. .	096	092	68.6	336 11 16.2	. .	− 24.4	27 17 13.0	+ 2.9
34	291 20	11.3	10.0	17.5	21.1	34	. .	. .	. .	760	860	68.6	68 35 51.0	. .	+ 2 20.0	119 44 32.2	−15.4
35	325 54	19.3	17.4	26.0	28.6	33	. .	. .	. .	350	417	68.6	34 1 37.3	. .	+ 37.4	85 8 35.9	− 0.5
36	3 50	9.1	11.1	18.3	19.5	33	. .	042	. .	010	. .	68.6	356 5 23.4	. .	− 3.8	47 11 40.8	− 0.6
37	354 44	21.4	21.2	28.3	0.5	36	. .	805	. .	725	. .	68.6	5 12 31.4	. .	+ 5.1	56 18 57.7	− 2.5
38	6 18	22.0	21.9	0.7	2.0	33	810	890	. .	. .	. .	68.6	353 37 48.1	. .	− 6.2	44 44 3.1	− 1.2
39	355 14	20.1	18.5	26.9	28.6	38	. .	180	. .	120	. .	68.6	4 42 50.8	76.0	+ 4.6	55 49 16.6	− 2.9
40	294 10	14.5	11.6	20.0	23.6	34	. .	105	. .	055	. .	68.6	65 45 42.0	. .	+ 2 2.7	116 54 5.9	−13.0
41	11 26	17.3	15.5	25.9	27.9	32	. .	553	. .	602	. .	68.6	348 29 23.8	. .	− 11.3	39 35 33.7	− 1.8
42	292 48	22.6	19.6	28.7	2.0	34	. .	762	. .	722	. .	68.6	67 8 0.4	. .	+ 2 10.9	118 16 32.5	−12.3
43	315 54	18.2	17.6	23.5	29.0	32	. .	210	. .	137	. .	68.6	14 1 17.6	. .	+ 13.9	65 7 52.7	− 5.1
44	354 48	21.1	20.4	27.5	0.5	36	. .	770	. .	770	. .	68.6	5 8 31.0	. .	+ 5.0	56 14 57.2	+ 1.4
45	341 14	19.0	18.0	23.5	28.2	35	. .	023	. .	013	. .	68.6	18 42 1.4	. .	+ 18.9	69 48 41.5	− 6.1
46	150 2	15.6	15.2	21.6	24.8	37	. .	. .	956	956	895	68.6	209 54 43.1	. .	+ 32.1	21 11 6.0	− 3.0
47	6 32	17.1	16.5	24.5	27.2	38	. .	100	. .	050	. .	68.6	353 24 47.6	. .	− 6.5	44 31 2.3	− 5.9
48	299 58	21.0	20.2	27.5	0.9	32	. .	835	. .	820	. .	68.6	59 57 30.3	. .	+ 1 36.3	111 5 27.8	− 0.5
49	47 38	20.3	19.5	26.4	28.3	36	038	040	055	040	095	68.6	312 18 18.7	. .	− 1 1.4	3 23 38.5	− 2.1

No.	Barom.	At. Ther.
	in.	°
4	30.13	78.5
15	30.13	76.5
16	30.12	75.0
19	30.12	79.5
23	30.115	84.5
25	30.10	88.5
27	30.08	83.0
39	30.08	79.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
25	− 2.3	+ 15 48.0	. .	+ 15 45.7
26	− 2.3	− 15 48.0	. .	− 15 50.3
27	−44 1.5	+ 14 54.2	. .	− 29 7.3

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
June 24	1	α Lyræ	Sk.	22.6	25.8	27.8	35.6	38.1	40.0	48.6	50.7	54.0	32 38.23	− 0.68	+ 5.11	+ 5.04	18 32 42.59	− 0.05
	2	Comet Coggia, S.P.	Sk.	30.7	23 6	18.5	2.3	51.6	46.0	35.3	30.9	24.2	25 56.87	+ 1.55	. .	+ 5.02	7 26 3.44	. .
	3	δ Persei	E.	35.1	39.2	41.4	50.4	53.5	56.6	5.6	7.5	11.5	33 53.42	− 1.00	. .	+ 4.69	3 33 57.11	+ 0.14
	4	η Tauri	E.	42.3	44.9	46.6	53.1	55.4	57.8	4.4	6.0	9.0	39 55.50	− 0.62	+ 4.73	+ 4.69	3 39 59.57	− 0.04
	5	ζ Persei	E.	54.1	57.1	59.0	6.4	8.6	11.0	18.5	20.0	23.0	46 8.63	− 0.72	+ 4.68	+ 4.68	3 46 12.59	− 0.01
	6	α Tauri	E.	24.3	27.0	32.8	34.9	37.0	39.0	41.4	47.0	49.7	28 37.01	− 0.54	+ 4.77	+ 4.67	4 28 41.14	− 0.12
	7	β Orionis. . . .	E.	11.9	14.4	16.0	22.0	24.2	26.3	32.4	34.0	36.5	8 24.19	− 0.32	+ 4.68	+ 4.66	5 8 28.53	− 0.02
	8	β Tauri	E.	1.5	4.4	6.0	13.0	15.3	17.7	24.6	26.3	29.2	16 15.33	− 0.68	+ 4.60	+ 4.65	5 18 19.30	+ 0.03
25	9	Sun I, N. . . .	E.	32.7	35.6	37.3	43.9	46.0	48.2	54.9	56.6	59.3	15 46.06	− 0.62	. .	+ 4 63	6 15 50.07	. .
	10	Sun II, S. . . .	E.	50.5	53.3	55.0	1.7	3.9	6.0	12.8	14.5	17.0	18 3.86	− 0.62	. .	+ 4.63	6 18 7.87	. .
	11	a^2 Geminorum . .	E.	14.6	17.9	19.7	27.0	29.3	31.8	39.0	40.8	43.7	26 29.31	− 0.73	+ 4.61	+ 4.61	7 26 33.19	+ 0.24
	12	α Canis Minoris. .	E.	25.4	28.0	29.5	35.7	37.8	39.9	46.0	47.6	50.0	32 37.77	− 0.44	+ 4.60	+ 4.61	7 32 41.94	− 0.15
	13	β Geminorum . .	E.	18.0	20.9	22.5	29.7	32.0	34.3	41.2	43.0	45.9	37 31.94	− 0.68	+ 4.71	+ 4.60	7 37 35.86	− 0.14
	14	Mercury I, N. . .	E.	47.2	50.0	51.7	58.1	0.6	2.7	9.0	10.9	13.6	7 0.42	− 0.59	. .	+ 4.60	8 7 4.43	+ 0.27
	15	Mercury S. . . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	16	Venus I, S. . .	E.	34.0	36.9	38.6	45.0	47.4	49.7	56.3	57.8	0.5	30 47.36	− 0.59	. .	+ 4.59	8 30 51.36	+ 0.45
	17	Venus N. . . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	18	ε Hydræ	E.	. .	. .	. .	. .	4.1	6.2	10.4	12.0	14.4	40 2.11	− 0.45	+ 4.40	+ 4.59	8 40 6.25	+ 0.15
28	19	51 Cephei, S. P. .	F.	. .	. .	37.0	55.0	12.0	30.0	. .	. .	. .	40 12.32	+11.81	. .	+ 2.85	6 40 26.98	− 0.39
	20	β Lyræ	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	21	Comet Coggia, S. P.	F.	59.0	52.6	48.7	33.3	28.3	23.2	7.9	4 2	58.0	32 28.36	+ 1.12	. .	+ 2.84	7 32 32.32	. .
	22	γ Aquilæ. . . .	F.	. .	. .	. .	. .	18.0	20.2	24.3	25.9	28.4	40 15.99	− 0.46	+ 2.82	+ 2.83	19 40 18.46	+ 0.14
	23	δ Aquilæ. . . .	F.	25.6	28.2	29.7	36.0	38.0	40.0	46.2	47.7	50.3	44 37.97	− 0.45	+ 2.82	+ 2.83	19 44 40.45	+ 0.15
	24	β Aquilæ. . . .	F.	. .	3.0	5.1	7.2	9.3	11.4	15.5	17.0	19.5	49 7.21	− 0.43	+ 2.85	+ 2.83	19 49 9.61	+ 0.01
	25	λ Ursæ Minoris. .	F.	. .	. .	. .	. .	. .	12.0	0.0	. .	. .	51 22.45	−31.17	. .	+ 2.83	19 50 54.01	− 1.16
	26	η Tauri	E.	44.0	47.0	48.7	55.4	57.7	59.9	6.4	8.1	11.0	39 57.58	− 0.54	+ 2.68	+ 2.65	3 39 59.69	− 0.03
	27	ζ Persei	E.	. .	. .	5.8	8.2	10.6	13.1	55.5	. .	. .	46 10.64	− 0.66	+ 2.73	+ 2.65	3 46 12.63	− 0.09
	28	γ^1 Eridani. . . .	E.	53.9	56.6	58.2	4.5	6.5	8.6	15.0	16.6	19.3	52 6.58	− 0.13	+ 2.52	+ 2.65	3 52 9.10	+ 0.17
	29	α Tauri	E.	26.4	29.0	30.7	37.2	39.3	41.4	47.8	49.3	52.0	28 39.23	− 0.45	+ 2.55	+ 2.64	4 28 41.42	+ 0.07
	30	α Aurigæ . . .	E.	. .	. .	14.8	17.7	20.8	23.8	26.7	. .	. .	7 20.76	− 0.96	.	+ 2.63	5 7 22.43	− 0.06
	31	β Orionis . . .	E.	14.0	16.6	18.1	24.2	26.3	28.4	34.5	36.0	38.8	8 26.32	− 0.19	+ 2.49	+ 2.63	5 8 28.76	+ 0.14
	32	β Tauri	E.	3.4	6.2	7.9	15.0	17.3	19.6	26.7	28.5	31.4	18 17.33	− 0.61	+ 2.61	+ 2.63	5 18 19.35	0.00
29	33	Sun I, S. . . .	E.	10.3	13.2	14.8	21.5	23.6	25.8	32.5	34.4	36.9	32 23.67	− 0.54	. .	+ 2.62	6 32 25.75	. .
	34	Sun II, N. . . .	E.	. .	. .	39.0	41.2	43.6	45.7	50.1	51.8	54.6	34 41.22	− 0.54	. .	+ 2.62	6 34 43.30	. .
	35	a^2 Geminorum . .	E.	16.8	19.9	21.6	28.8	31.3	33.8	41.0	42.8	45.8	26 31.31	− 0.67	+ 2.58	+ 2.59	7 26 33.23	+ 0.25
	36	α Canis Minoris .	E.	27.4	30.0	31.6	37.7	39.8	41.9	48.0	49.5	52.0	32 39.77	− 0.33	+ 2.51	+ 2.59	7 32 42.02	− 0.17
	37	β Geminorum . .	E.	20.0	23.0	24.7	31.7	34.0	36.4	43.4	45.0	48.0	37 34.02	− 0.61	+ 2.59	+ 2.59	7 37 36.00	− 0.03
	38	Mercury I, S. . .	E.	26.6	29.4	31.0	37.6	39.6	41.7	48.3	49.8	52.7	22 39.63	− 0.49	. .	+ 2.58	8 22 41.72	+ 0.29
	39	Mercury N. . . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	40	ε Hydræ	E.	51.4	54.0	55.5	1.7	3.8	5.9	12.0	13.6	16.1	40 3.78	− 0.34	+ 2.62	+ 2.57	8 40 6.01	− 0.08
	41	Venus I, N. . .	E.	18.1	20.8	22.5	28.9	31.1	33.3	39.9	41.5	44.3	50 31.16	− 0.49	. .	+ 2.57	8 50 33.24	+ 0.46
	42	Venus S. . . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	43	B. A. C. 5075 . .	E.	45.8	48.8	50.6	57.6	0.0	2.5	9.5	11.4	14.4	18 0.07	− 0.57	. .	+ 2.47	15 18 1.97	− 2.04
	44	B. A. C. 5091 . .	E.	6.7	12.7	16.0	30.0	34.6	29.4	53.0	56.5	2.4	20 34.59	− 1.56	. .	+ 2.47	15 20 35.50	− 3.03
	45	α Coronæ Borealis .	E.	7.4	10.3	12.1	18.8	21.1	23.5	30.5	32.0	35.0	29 21.19	− 0.51	+ 2.58	+ 2.47	15 29 23.15	− 0.11
	46	XV, 21	E.	9.7	12.5	14.0	20.5	22.7	24.9	31.5	33.1	35.9	33 22.76	0.00	. .	+ 2.47	15 33 25.23	− 2.06
	47	α Serpentis . . .	E.	51.1	53.7	55.4	1.4	3.5	5.5	11.8	13.3	15.9	38 3.51	− 0.28	+ 2.52	+ 2.46	13 38 5.69	− 0.04
	48	ε Serpentis . . .	E.	19.6	22.2	23.8	29.9	32.0	34.0	40.2	41.7	44.3	44 31.97	− 0.26	+ 2.40	+ 2.46	15 44 34.17	− 0.03
	49	ζ Ursæ Minoris . .	E.	55.4	3.0	22.9	32.7	42.7	52.6	3.0	22.7	30.3	48 42.81	− 3.53	. .	+ 2.46	15 48 41.74	− 0.05
	50	B. A. C. 5322 . .	.	39.0	41.8	43.5	50.0	52.2	54.4	1.0	2.8	5.6	56 52.26	− 0.46	. .	+ 2.46	15 56 54.26	− 2.10

49. Bisections at sets B and D.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	359 42	10 16.0	13.4	21.0	22.0	34	. .	005	. .	005	. .	68.6	0 13 42.0	. .	+ 0.2	51 20 3.4	+ 0.1
2	73 18	} 9 17.3	13.1	21.9	24.8	38	818	925	. .	. .	. .	68.6	286 35 53.3	69.5	− 3 5.9	337 39 8.6	. .
		(13 17.1	13.5	20.9	26.1												
3	8 26	10 19.9	20.8	0.7	3.1	37	. .	900	. .	810	. .	67.3	351 30 47.7	. .	− 8.2	42 37 0.7	− 3.1
4	344 46	16.6	16.7	24.9	28.3	36	. .	770	. .	750	. .	67.3	15 10 26.2	79.0	+ 15.0	66 17 2.4	− 3.4
5	352 34	20.3	17.7	0.3	4.0	38	. .	620	. .	480	. .	67.3	7 22 57.7	. .	+ 7.2	58 29 26.1	− 3.7
6	337 18	24.8	25.7	3.5	8.3	33	. .	930	. .	900	. .	67.3	22 37 51.6	. .	+ 22.9	73 44 35.7	− 2.1
7	312 42	17.0	18.3	27.3	0.5	32	. .	560	. .	520	. .	67.3	47 13 23.1	. .	+ 58.9	98 20 43.2	− 3.0
8	349 32	12.8	14.0	21.0	27.0	33	. .	020	. .	945	. .	67.3	10 23 25.5	. .	+ 10.0	61 29 56.7	− 1.8
9	344 42	20.2	17.0	28.2	2.2	33	435	480	. .	. .	. .	67.3	15 13 38.2	90.0	+ 14.7	66 20 14.1	. .
10	344 12	15.5	14.6	23.3	29.3	39	. .	. .	. .	610	660	67.3	15 45 9.7	. .	+ 15.2	66 51 46.1	. .
11	353 12	9.0	11.2	20.0	23.5	33	. .	860	. .	840	. .	67.3	6 43 36.0	. .	+ 6.3	57 50 3.5	− 2.9
12	326 36	17.7	20.6	28.6	1.5	35	. .	540	. .	500	. .	67.3	33 20 10.1	. .	+ 35.4	84 27 6.7	− 2.5
13	349 22	12.3	14.5	23.2	27.3	33	. .	720	. .	625	. .	67.3	10 33 36.7	. .	+ 10.0	61 40 7.9	− 0.9
14	342 0	15.7	17.8	26.5	0.1	34	330	. .	. .	. .	360	67.3	17 55 50.3	. .	+ 17.4	69 2 28.9	. .
15	342 0	15.7	17.8	26.5	0.1	34	. .	920	. .	915	. .	67.3	17 55 58.9	. .	+ 17.4	69 2 37.5	. .
16	341 50	19.0	20.5	29.0	2.2	37	840	. .	. .	. .	860	67.3	18 6 46.6	. .	+ 17.5	69 13 25.3	. .
17	341 50	19.0	20.5	29.0	2.2	36	. .	980	. .	965	. .	67.3	18 6 33.0	. .	+ 17.5	69 13 11.7	. .
18	327 56	21.2	24.6	1.0	5.0	35	. .	. .	. .	500	410	67.3	32 0 12.9	94.0	+ 33.5	83 7 7.6	− 1.1
19	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
20	354 16	23.0	21.3	29.3	3.1	36	. .	770	. .	750	. .	70.6	5 40 34.7	. .	+ 5.4	56 47 1.3	− 0.8
21	74 40	17.7	13.6	21.3	27.6	29	. .	618	. .	750	. .	70.6	285 14 38.7	77.5	− 3 17.7	336 17 42.2	. .
22	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
23	329 36	22.4	24.6	1.5	5.8	38	. .	036	. .	016	. .	70.6	30 20 55.8	. .	+ 32.1	81 27.49.1	− 0.1
24	327 8	26.5	25.0	3.5	7.9	32	. .	. .	. .	190	. .	70.6	32 47 28.8	. .	+ 35.3	83 54 25.3	− 0.4
25	49 56	14.7	11.8	19.2	23.9	31	. .	. .	. .	940	. .	70.6	309 59 11.5	77.2	− 1 5.2	1 4 27.5	− 1.4
26	344 46	28.9	29.3	8.0	11.3	35	. .	935	. .	850	. .	69.0	15 10 27.4	91.0	+ 14.5	66 17 3.1	− 2.4
27	352 34	23.5	25.0	4.8	6.5	38	. .	. .	. .	310	280	69.0	7 23 0.3	. .	+ 6.9	58 29 28.4	− 1.2
28	307 12	21.0	21.7	1.3	4.3	35	. .	830	. .	810	. .	69.0	52 44 18.7	. .	+ 1 10.0	103 51 49.9	− 1.7
29	337 18	11 1.0	3.0	9.8	12.8	33	. .	590	. .	520	. .	69.0	22 37 53.8	. .	+ 22.1	73 44 37.1	− 0.3
30	6 54	10 25.2	27.9	7.0	7.6	32	810	790	. .	. .	. .	69.0	353 1 37.6	. .	− 6.5	44 7 52.3	− 2.1
31	312 42	16.8	18.5	28.1	0.2	32	. .	520	. .	480	. .	69.0	47 13 24.3	97.5	+ 57.0	98 20 42.5	− 2.9
32	349 32	16.0	16.3	24.9	28.8	32	. .	820	. .	770	. .	69.0	10 23 27.1	. .	+ 9.7	61 29 58.0	− 0.5
33	344 0	17.0	19.0	25.0	29.6	31	820	765	. .	. .	. .	69.0	15 55 12.8	. .	+ 15.0	67 1 49.0	. .
34	344 32	23.0	24.4	2.6	4.2	33	. .	. .	. .	350	270	69.0	15 23 42.3	100.0	+ 14.5	66 30 18.0	. .
35	353 12	21.8	23.7	3.1	4.5	33	. .	090	. .	060	. .	69.0	6 43 38.2	. .	+ 6.2	57 50 5.6	− 1.1
36	326 36	23.6	22.7	2.4	5.8	35	. .	195	. .	160	. .	69.0	33 20 10.6	. .	+ 34.5	84 27 6.3	− 2.6
37	349 22	20.6	17.3	0.2	3.3	33	. .	235	. .	215	. .	69.0	10 33 37.5	100.0	+ 9.8	61 40 8.5	− 0.5
38	340 24	18.5	22.2	29.5	2.0	31	970	. .	. .	. .	950	69.0	19 31 18.5	. .	+ 18.6	70 37 58.3	. .
39	340 24	18.5	22.2	29.5	2.0	31	. .	445	. .	425	. .	69.0	19 31 10.3	. .	+ 18.6	70 37 50.1	. .
40	327 56	18.5	20.3	29.0	1.6	35	. .	. .	. .	765	745	69.0	32 0 16.0	. .	+ 32.7	83 7 9.9	+ 1.4
41	340 36	22.6	24.8	3.2	5.4	35	705	. .	. .	. .	720	69.0	19 20 19.4	. .	+ 18.4	70 26 59.0	. .
42	340 36	22.6	24.8	3.2	5.4	36	. .	560	. .	575	. .	69.0	19 20 32.3	. .	+ 18.4	71 27 11.9	. .
43	351 48	11 1.7	3.5	8.3	11.0	37	. .	450	. .	400	. .	69.5	8 8 53.2	. .	+ 7.8	59 15 22.2	− 1.0
44	24 50	10 24.8	24.7	3.3	4.6	36	. .	200	. .	150	. .	69.5	335 6 27.8	. .	− 25.2	26 12 23.8	+ 4.3
45	348 12	25.0	22.5	1.0	2.7	38	. .	720	. .	690	. .	69.5	11 45 4.5	. .	+ 11.3	62 51 37.0	0.0
46	299 52	24.8	24.7	1.7	5.3	34	. .	. .	. .	255	235	69.5	60 3 57.5	82.0	+ 1 34.2	111 11 52.9	−13.7
47	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
48	325 54	24.5	23.5	0.8	4.3	33	. .	005	. .	975	. .	69.5	34 1 37.3	. .	+ 36.8	85 8 35.3	− 0.6
49	39 12	23.2	21.5	1.7	1.5	32	445	. .	410	. .	385	69.5	320 43 27.4	. .	− 44.5	11 49 4.1	− 0.6
50	344 12	23.5	23.8	0.2	3.0	34	. .	970	. .	920	. .	69.5	15 44 6.7	. .	+ 15.4	66 50 43.3	− 3.5

No.	Barom.	At. Ther.
	in.	°
2	30.08	73.3
4	30.11	75.5
11	30.075	81.5
18	30.025	88.0
21	29.79	80.0
25	29.77	79.5
29	29.80	83.5
31	29.81	87.5
34	29.80	91.5
46	29.85	82.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
9	− 2.3	+ 15 46.0	. .	+ 15 43.7
10	− 2.3	− 15 46.0	. .	− 15 48.3
14	− 2.6	+ 4.3	. .	+ 1.7
15	− 2.6	− 4.3	0.0	− 6.9
16	− 2.3	− 6.8	0.0	− 9.1
17	− 2.3	+ 6.8	. .	+ 4.5
33	− 2.3	− 15 45.5	. .	− 15 47.8
34	− 2.3	+ 15 45.5	. .	+ 15 43.2
38	− 3.6	− 4.1	0.0	− 7.7
39	− 3.6	+ 4.1	. .	+ 0.5
41	− 2.2	+ 6.5	. .	+ 4.3
42	− 2.2	− 6.5	+ 0.1	− 8.6

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
June 29	1	XVI, 2	E.	2.7	5.5	7.0	13.6	15.9	18.2	24.7	26.5	29.0	6 15.90	0.00	. .	+ 2.46	16 6 18.36	— 2 22
	2	XVI, 5	E.	43.8	47.3	49.2	57.1	59.9	2.5	10.4	12.4	15.7	13 59.81	+ 0.13	. .	+ 2.46	16 14 2.40	— 2.60
	3	XVI, 6	E.	22.8	25.6	27.5	34.3	36.8	39.2	46.0	47.7	50.9	19 36.76	+ 0.08	. .	+ 2.46	16 19 39.30	— 2.40
	4	XVI, 10	E.	26.8	29.5	31.4	37.9	40.0	42.2	48.9	50.5	53.1	24 40.03	0.00	. .	+ 2.45	16 24 42.48	— 2.31
	5	XVI, 12	E.	41.0	44.4	46.2	54.1	56 8	59.5	7.4	9.1	12.6	29 56.79	+ 0.20	. .	+ 2.45	16 29 59.44	— 2.67
	6	XVI, 14	E.	1.3	4.5	6.6	14.3	16.9	19.5	27.1	29.2	32.5	35 16.88	+ 0.19	. .	+ 2.45	16 35 19.52	— 2.65
	7	XVI, 18	E.	. .	. .	19.6	22.0	24.5	26.9	31.8	33.7	36.9	37 22.04	+ 0.14	. .	+ 2.45	16 37 24.63	— 2.58
	8	B. A. C. 5658	E.	56.1	0.8	3.6	14.5	18.0	21.6	32.5	35.2	39.6	44 17.99	— 1.16	. .	+ 2.45	16 44 19.28	— 2.78
	9	XVI, 23	E.	58.8	1.7	3.2	9.8	12.1	14.4	20.9	22.7	25.5	49 12.12	+ 0.02	. .	+ 2.45	16 49 14.59	— 2.44
	10	κ Ophiuchi	E.	29.9	32.5	34.0	40.2	42.3	44.5	50.5	52.0	54.6	51 42.28	— 0.30	+ 2.49	+ 2.45	16 51 44.43	0.00
	11	d Herculis	E.	. .	. .	. .	. .	. .	. .	7.5	9.5	12.6	56 57.79	— 0.62	. .	+ 2.44	16 56 59.61	+ 0.19
	12	B. A. C. 5776	E.	. .	. .	24.0	27.5	30 6	33.6	36.8	. .	. .	1 30.50	— 0.94	. .	+ 2.44	17 1 32.00	— 2.57
	13	B. A. C. 5798	E.	. .	. .	46.0	48.1	50.4	52.7	55.0	. .	. .	5 50.44	— 0.48	. .	+ 2.44	17 5 52.40	— 2.25
	14	a^1 Herculis	E.	41.5	44.4	45.8	52.0	54.2	56.4	2.6	4.3	6.9	8 54.23	— 0.36	+ 2.52	+ 2.44	17 8 56.31	— 0.06
	15	δ Ursæ Minoris	E.	. .	. .	. .	51.0	24.5	0.0	32.5	. .	. .	13 24.68	—12.26	. .	+ 2.42	18 13 14.84	— 0.08
	16	B. A. C. 6251	E.	6.7	9.5	11.3	17.8	20.0	22.2	28.7	30.4	33.2	18 19.98	— 0.44	. .	+ 2.42	18 18 21.96	— 2.26
	17	XVIII, 13	F.	10.6	14.0	16.0	23.5	26.0	28.5	36.0	37.9	41.5	25 26.00	+ 0.17	. .	+ 2.42	18 25 28.59	— 3.00
	18	ι Aquilæ	E.	8.8	11.4	13.0	19.1	21.3	23.4	29.5	31.0	33.7	28 21.24	— 0.13	+ 2.35	+ 2.42	18 28 23.53	+ 0.14
	19	α Lyræ	E.	25.1	28.5	30.5	38.2	40.8	43.5	51.4	53.4	56.6	32 40.89	— 0.70	+ 2.51	+ 2.42	18 32 42.61	— 0.07
	20	51 Cephei, S. P.	E.	. .	. .	37.0	53.0	11.5	28.0	46.5	. .	. .	40 11.20	+14.95	. .	+ 2.42	6 40 28.57	+ 0.04
	21	β Lyræ	E.	11.5	14.6	16.5	23.6	26.0	28.6	36.0	37.7	40.7	45 26.13	— 0.61	+ 2.45	+ 2.42	18 45 27.94	0.00
	22	Moon II, S.	E.	0.1	2.9	4.7	12.0	14.3	16.5	23.7	25.6	28.4	3 14.24	+ 0.08	. .	+ 2.41	19 3 16.73	—73.53
	23	d Sagittarii	E.	3.0	5.6	7.3	13.8	16.0	18.3	24.6	26.3	29.0	10 15.99	— 0.02	+ 2.34	+ 2.41	19 10 18.38	+ 0.09
	24	XIX, 5	E.	1.3	4.0	5.8	12.5	14.9	17.3	23.9	25.5	28.4	13 14.84	+ 0.05	. .	+ 2.41	19 13 17.30	— 2.74
	25	δ Aquilæ	E.	56.5	59.0	0.6	6.7	8.8	10.9	16.9	18.6	21.0	19 8.78	— 0.24	+ 2.46	+ 2.41	19 19 10.95	0.00
	26	κ Aquilæ	E.	54.6	57.2	58.8	4.8	7.0	9.0	15.0	16.8	19.3	30 6.94	— 0.14	+ 2.32	+ 2.40	19 30 9.20	+ 0.02
	27	Comet Coggia, S. P.	E.	21.1	17.4	7.0	2.3	57.1	52.0	46.6	37.5	33.5	33 57.17	+ 1.60	. .	+ 2.40	19 34 1.17	. .
	28	γ Aquilæ	E.	3.8	6.5	7.9	12.1	16.3	20.4	24.5	26.0	28.6	40 16.23	— 0.31	+ 2.45	+ 2.40	19 40 18.12	— 0.22
	29	α Aquilæ	E.	25.9	28.4	30.0	36.2	38.3	40.4	46.5	48.0	50.7	44 38.27	— 0.29	+ 2.38	+ 2.40	19 44 40.38	+ 0.06
	30	λ Ursæ Minoris	E.	. .	. .	52.5	43.5	35.0	25.5	19.0	. .	. .	51 33.02	—38.64	. .	+ 2.40	19 50 56.78	+ 1.62
July 5	31	δ Ursæ Minoris	E.	. .	. .	. .	. .	. .	28.0	37.0	3.0	44.0	13 18.50	— 4.64	. .	+ 0.03	18 13 13.89	— 0.23
	32	ι Aquilæ	E.	11.5	14.2	15.8	21.9	23.9	26.0	32.3	33.8	36.5	28 23.99	— 0.50	+ 0.03	+ 0.02	18 28 23.51	+ 0.06
	33	α Lyræ	E.	27.7	30.9	32.8	40.8	43.4	46.0	53.9	55.9	59.1	32 43.39	— 0.67	+ 0.02	+ 0.02	18 32 42.74	+ 0.02
	34	51 Cephei, S. P.	E.	. .	. .	48.0	5 5	23.5	41.0	56.5	. .	. .	40 22.90	+ 4.79	. .	+ 0.02	6 40 27.71	— 0.52
	35	β Lyræ	E.	13.9	17.1	18.8	26.2	28.6	31.0	38.4	40.1	43.2	45 28.59	— 0.64	+ 0.07	+ 0.02	18 45 27 97	— 0.02
	36	δ Aquilæ	E.	59.3	1.9	3.5	9.5	11.6	13.7	19.7	21.4	23.9	19 11.61	— 0.53	+ 0.01	+ 0.01	19 19 11.09	+ 0.05
	37	κ Aquilæ	E.	57.4	0.0	1.5	7.7	9.8	11.9	18.0	19.6	22.2	30 9.79	— 0.51	— 0.07	0.00	19 30 9.28	+ 0.11
	38	Comet Coggia, S. P.	E.	52.9	48.0	. .	. .	. .	. .	. .	. .	. .	41 27.51	+ 0.07	. .	0.00	7 41 27.58	. .
	39	β Aquilæ	E.	58.0	0.6	2.0	8.2	10.3	12.4	18.5	20.0	22.6	49 10.29	— 0.54	— 0.01	— 0.01	19 49 9.74	+ 0.03
	40	α Tauri	Sk.	29.2	32.0	33.6	39.9	42.1	44.2	50.5	52.1	54.7	28 42.03	— 0.39	+ 0.06	— 0.04	4 28 41.40	— 0.12
	41	α Aurigæ	Sk.	. .	. .	17.5	20.6	23.5	26.4	29.4	. .	. .	7 23.48	— 0.89	. .	— 0.03	5 7 22.56	— 0.13
	42	β Orionis	Sk.	16.9	19.6	21.0	27.4	29.4	31.4	37.7	39.2	41.8	8 29.38	— 0.44	— 0.18	— 0.03	5 8 28.91	+ 0.15
6	43	Mercury I, N.	Sk.	38.4	41.0	42.6	49.1	51.1	53.2	59.7	1.2	3.8	39 51.12	— 0.59	. .	— 0.14	8 39 50.39	+ 0.33
	44	α Hydræ	Sk.	12.0	14.4	16.0	22.1	24.0	26.0	32.5	34.0	36.6	21 24.18	— 0.44	— 0.15	— 0.16	9 21 23.58	— 0.04
	45	Venus I, N.	Sk.	54.6	57.5	59.0	5.5	7.6	9.8	16.3	17.8	20.6	24 7.63	— 0.60	. .	— 0.16	9 24 6.87	+ 0.47
	46	η Herculis	Sk.	21.9	25.2	27.5	35.2	37.9	40.6	48.4	50.3	53.6	38 37.84	— 0.64	— 0.29	— 0.33	16 38 36.87	— 0 03
	47	a^1 Herculis	Sk.	44.4	47.0	48.7	55.0	57.2	59.3	5.6	7.2	9.7	8 57.12	— 0.46	— 0.20	— 0.34	17 8 56.32	— 0.06
	48	B. A. C. 5900	Sk.	12.8	15.6	17.3	23.8	26.0	38.2	34.8	36.3	39.2	21 26.00	— 0.50	. .	— 0.34	17 21 25.16	— 2.25
	49	B. A. C. 5939	Sk.	24.3	27.0	28.6	35.0	37.0	39.0	45.5	47.0	49.7	28 37.01	— 0.46	. .	— 0.35	17 28 36.20	— 2.27
	50	XVII, 12	Sk.	53.9	56.9	58.6	4.9	7.1	9.3	15.9	17.4	20.2	35 7.13	— 0.30	. .	— 0.35	17 35 6.48	— 2.57

5, 13, 27. Bisections at sets B and D.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	300 0	10 24.0	21.3	0.5	4.0	37	. .	920	. .	900	. .	69.5	59 56 51.6	. .	+ 1 34.0	111 4 46.8	−12.6
2	281 12	26.5	25.5	4.8	7.2	34	. .	420	. .	320	. .	69.5	78 44 0.8	. .	+ 4 25.9	129 54 47.9	−15.8
3	292 4	28.2	28.7	5.3	7.6	33	. .	100	. .	025	. .	69.5	67 51 42.4	. .	+ 2 13.2	119 0 16.8	−13.6
4	299 52	20.7	20.2	27.9	0.2	34	. .	. .	. .	550	470	69.5	60 3 57.2	. .	+ 1 34.5	111 11 52.9	−12.0
5	282 14	28.7	28.3	6.4	8.6	40	160	. .	. .	. .	140	69.5	77 43 31.5	. .	+ 4 4.8	128 53 57.5	−14.6
6	283 12	29.9	29.3	7.3	9.8	37	. .	570	. .	535	. .	69.5	76 44 52.6	. .	+ 3 47.1	127 55 0.9	−14.2
7	287 30	28.2	28.0	5.5	7.3	40	. .	. .	. .	995	950	69.5	72 27 43.4	. .	+ 2 50.8	123 36 55.4	−13.4
8	16 40	21.2	21.9	1.2	0.9	34	. .	155	. .	135	. .	69.5	343 15 53.4	. .	− 16.4	34 21 58.2	− 0.8
9	298 8	27.5	27.2	4.5	7.2	38	. .	150	. .	140	. .	69.5	61 48 59.4	. .	+ 1 41.7	112 57 2.3	−11.2
10	330 38	26.5	27.0	4.0	7.0	37	. .	715	. .	690	. .	69.5	29 18 52.3	. .	+ 30.7	80 25 44.2	+ 0.7
11	354 48	11 0.7	29.9	7.5	9.2	35	. .	. .	. .	960	945	69.5	5 8 29.4	. .	+ 4.9	56 14 55.5	+ 0.9
12	10 0	10 23.9	23.8	2.1	2.9	31	. .	035	. .	960	. .	69.5	349 55 7.0	. .	− 9.7	41 1 18.5	− 0.2
13	345 26	24.7	22.5	1.2	2.8	34	000	. .	. .	. .	985	69.5	14 29 52.1	. .	+ 14.1	65 36 27.4	− 4.5
14	335 34	24.7	24.5	2.0	6.3	31	. .	. .	. .	140	105	69.5	24 21 10.2	78.5	+ 24.8	75 27 56.2	− 0.1
15	47 38	27.7	27.3	6.9	7.2	35	. .	300	. .	265	. .	69.5	312 18 16.6	. .	− 1 0.3	3 23 37.5	− 1.4
16	342 46	22.5	21.3	29.8	1.6	36	. .	960	. .	940	. .	69.5	17 10 36.0	. .	+ 17.0	68 17 14.2	− 5.2
17	284 38	29.7	28.2	6.6	8.2	36	. .	310	. .	150	. .	69.5	75 18 31.5	. .	+ 3 26.2	126 28 18.9	− 5.8
18	312 44	23.9	24.0	2.1	5.3	36	. .	630	. .	590	. .	69.5	47 12 33.2	. .	+ 59.4	98 19 53.8	+ 0.9
19	359 42	21.7	21.5	0.5	0.8	33	. .	220	. .	190	. .	69.5	0 13 38.6	. .	+ 0.2	0 20 0.0	− 1.8
20	53 46	25.2	23.5	3.5	4.0	31	070	. .	050	. .	015	69.5	306 9 7.9	. .	− 1 15.2	357 14 13.9	− 1.0
21	354 16	25.0	25.3	2.9	5.3	36	. .	. .	. .	685	655	69.5	5 40 35.7	. .	+ 5.5	56 47 2.4	+ 0.6
22	292 28	11 2.4	0.4	9.0	11.7	34	860	770	750	725	670	69.5	67 28 11.7	. .	+ 2 11.9	118 36 44.8	. .
23	301 54	10 21.9	20.0	29.1	3.3	37	. .	485	. .	365	. .	69.5	58 2 42.8	. .	+ 1 28.2	109 10 32.2	+ 2.9
24	295 18	28.7	28.5	6.6	10.2	32	. .	450	. .	330	. .	69.5	64 37 33.1	. .	+ 1 55.7	115 45 50.0	− 2.1
25	323 56	26.2	26.2	3 0	6.2	38	. .	. .	. .	585	560	69.5	36 1 5.2	. .	+ 40.1	87 8 6.5	− 1.0
26	313 44	25.7	24.9	2.4	6.0	30	. .	740	. .	680	. .	69.5	46 11 3.8	74.5	+ 57.5	97 18 22.5	+ 1.3
27	75 8	24.3	23.3	0.4	3.3	28	965	. .	045	. .	110	69.5	284 46 36.2	. .	− 3 25.7	335 49 31.7	. .
28	331 22	22.4	21.7	0.2	2.5	37	. .	. .	. .	575	505	69.5	28 34 45.4	. .	+ 30.1	79 41 36.7	+ 1.5
29	329 36	24.5	23.7	1.2	4.5	38	. .	045	. .	990	. .	69.5	30 20 54.5	. .	+ 32.4	81 27 48.1	− 0.9
30	49 56	23.5	22.2	0.5	2.2	31	370	. .	430	. .	435	69.5	309 59 12.2	. .	− 1 6.0	1 4 27.4	− 1.2
31	47 38	26.2	24.7	2.4	4.0	35	. .	. .	. .	305	310	70.0	312 18 15.5	. .	− 1 2.0	3 23 34.7	− 2.5
32	312 44	17.7	16.0	24.8	29.3	36	. .	795	. .	715	. .	70.0	47 12 29.1	. .	+ 1 1.1	98 19 51.4	− 0.9
33	359 42	20.1	19.2	29.2	29.2	33	. .	245	. .	215	. .	70.0	0 13 37.9	66.0	+ 0.2	51 19 59.3	− 0.8
34	53 46	25.5	23.8	3.5	3.9	31	065	. .	060	. .	070	70.0	306 9 9.1	. .	− 1 17.3	357 14 13.0	− 0.3
35	354 16	23.2	22.6	1.2	1.5	36	. .	710	. .	670	. .	70.0	5 40 33.5	. .	+ 5.6	56 47 0.3	+ 0.2
36	323 56	21.7	19.5	28.5	1.3	38	. .	715	. .	665	. .	70.0	36 1 2.1	. .	+ 41.2	87 8 4.5	− 2.0
37	313 44	26.0	24.4	3.0	6.8	30	. .	400	. .	345	. .	70.0	46 10 59.4	. .	+ 59.1	97 18 19.7	− 0.9
38	79 36	22.5	18.2	27.0	29.5	27	420	345	. .	. .	. .	70.0	280 18 7.3	. .	− 5 2.3	331 19 26.2	. .
39	327 8	29.9	28.8	7.5	8.6	31	. .	885	. .	860	. .	70.0	32 47 26.1	63.5	+ 36.6	83 54 23.9	− 0.5
40	337 18	16.5	14.9	23.2	27.9	34	. .	415	. .	446	. .	67.2	22 37 49.5	76.6	+ 23.2	73 44 33.9	− 2.9
41	6 54	13.8	14.4	24.0	24.9	33	681	779	. .	. .	. .	67.2	353 1 37.5	. .	− 6.8	44 7 51.9	− 3.1
42	312 42	11 10.5	11.6	20.2	25.5	30	. .	720	. .	738	. .	67.2	47 13 19.0	78.5	+ 59.8	98 20 40.0	− 4.1
43	337 46	10 12.1	18.5	20.6	23.4	33	. .	430	. .	456	. .	67.2	22 9 32.4	84.3	+ 22.3	73 16 15.9	. .
44	312 56	14.5	14.0	22.5	26.2	32	. .	. .	. .	950	862	67.2	46 59 25.0	. .	+ 58.9	98 6 45.1	− 3.4
45	338 8	15.8	16.0	22.7	26.4	36	. .	. .	. .	942	016	67.2	21 48 28.5	82.2	+ 22.0	72 55 11.7	. .
46	0 12	16.3	14.0	21.5	24.8	34	. .	441	. .	482	. .	70.5	359 43 51.9	70.0	− 0.3	50 50 12.8	+ 0.7
47	335 34	15.5	13.0	19.9	25.3	31	647	730	. .	. .	. .	70.5	24 21 8.2	. .	+ 25.5	75 27 51.9	− 0.3
48	341 14	16.1	13.2	19.9	25.6	34	913	928	. .	. .	. .	70.5	18 41 58.1	. .	+ 19.1	69 48 38.4	− 3.6
49	334 18	18.5	15.4	23.0	28.4	35	970	013	. .	. .	. .	70.5	25 38 17.0	. .	+ 27.1	76 45 5.3	− 4.4
50	301 2	14.0	10.0	18.0	23.6	37	460	442	. .	. .	. .	70.5	58 54 34.1	. .	+ 1 33.3	119 2 28.6	− 8.4

No.	Barom.	At. Ther.
	in.	°
14	29.85	80.5
42	29.85	77.0
43	30.09	70.0
44	30.09	68.0
45	30.17	73.0
46	30.17	74.5
47	30.17	79.2
48	30.17	80.0
49	30.16	72.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	° ′ ″
22	−52 46.4	− 15 38.1	. .	−1 8 24.5
43	− 4.7	+ 4.7	. .	0.0
45	− 2.5	+ 6.6	. .	+ 4.1

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
July 6	1	XVII, 18 . . .	Sk.	29.5	32.9	34.9	42.8	45.4	48.0	56.0	57.7	1.3	40 45.39	− 0.20	. .	− 0.36	17 40 44.83	− 3.06
	2	Anonymous . .	Sk.	2.3	5.8	8.0	16.7	19.6	22.7	31.5	33.8	37.2	55 19.73	− 0.72	. .	− 0.36	17 55 18.65	− 2.47
	3	B. A. C. 6109 . .	Sk.	6.0	10.0	12.0	20.9	23.6	26.7	35.4	37.5	41.2	56 23.70	− 0.72	. .	− 0.36	17 56 22.62	− 2.47
	4	XVIII, 7 . . .	Sk.	52.6	55.8	57.6	5.3	7.9	10.5	18.4	20.1	23.4	10 7.96	− 0.21	. .	− 0.37	18 10 7.38	− 3.11
	5	Durch. 68°,446, S.P.	Sk.	. .	. .	9.5	3.5	58.1	52.0	47.0	. .	. .	24 58.02	+ 0.74	. .	− 0.37	6 24 58.39	+ 1.33
	6	Durch. 68°,447, S.P.	Sk.	. .	. .	5.0	59.7	54.4	48.4	42.6	. .	. .	27 54.02	+ 0.74	. .	− 0.37	6 27 54.39	+ 1.31
	7	51 Cephei, S. P. . .	Sk.	. .	. .	46.0	1.5	21.5	. .	56.5	. .	. .	40 20.80	+ 7.72	. .	− 0.38	6 40 28.14	− 0.19
	8	ζ Aquilæ	Sk.	27.7	30.3	32.0	38.1	40.4	42.6	48.8	50.3	53.0	59 40.36	− 0.46	− 0.45	− 0.39	18 59 39.51	+ 0.14
	9	κ Aquilæ	Sk.	57.7	0.2	1.7	8.0	10.1	12.2	18.3	19.8	22.5	30 10.06	− 0.35	− 0.48	− 0.40	19 30 9.31	+ 0.12
	10	Comet Coggia, S. P.	Sk.	51.2	46.0	43.0	30.3	26.1	22.0	9.9	6.6	1.7	42 26.31	+ 0.43	. .	− 0.40	7 42 26.34	. .
	11	α Andromedæ . .	Sk.	40.9	43.9	45.6	52.5	54.9	57.3	4.0	5.8	8.7	1 54.84	− 0.51	− 0.52	− 0.51	0 1 53.82	+ 0.01
	12	γ Pegasi	Sk.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	13	α Tauri	E.	30.0	32.7	34.4	40.9	42.9	45.0	51.4	53.0	55.7	28 42.89	− 0.66	− 0.70	− 0.77	4 28 41.46	− 0.00
	14	β Orionis	E.	17.8	20.4	22.0	28.0	30.0	32.1	38.3	40.0	42.8	8 30.16	− 0.60	− 0.78	− 0.79	5 8 28.77	− 0.01
	15	β Tauri	E.	7.0	10.0	11.6	18.6	21.0	23.2	30.4	32.0	34.8	18 20.96	− 0.69	− 0.75	− 0.79	5 18 19.48	− 0.00
	16	δ Orionis . . .	E.	23.1	25.7	27.3	33.3	35.4	37.5	43.5	45.1	47.7	25 35.40	− 0.61	− 0.77	− 0.79	5 25 34.00	− 0.05
	17	ε Orionis . . .	E.	38.1	40.6	42.0	48.4	50.5	52.5	58.6	0.1	2.5	29 50.37	− 0.61	− 0.74	− 0.79	5 29 48.97	− 0.06
	18	α Orionis . . .	E.	10.0	12.6	14.2	20.3	22.3	24.3	30.6	32.0	34.7	48 22.33	− 0.63	− 0.85	− 0.81	5 48 20.89	+ 0.01
7	19	Sun I, N. . . .	E.	14.0	16.9	18.4	25.2	27.4	29.5	36.3	37.9	40.8	5 27.38	− 0.67	. .	− 0.83	7 5 25.88	. .
	20	Sun II, S. . . .	E.	. .	. .	. .	. .	46.5	48.6	53.0	54.8	57.5	7 44.25	− 0.67	. .	− 0.83	7 7 42.75	. .
	21	ε Hydræ	E.	. .	. .	3.4	5.5	7.5	9.5	11.7	. .	. .	40 7.52	− 0.63	− 0.81	− 0.85	8 40 6.04	− 0.08
	22	Mercury I, N. . .	E.	57.4	0.0	1.7	8.0	10.1	12.4	18.7	20.4	23.0	41 10.19	− 0.65	. .	− 0.85	8 41 8.69	+ 0.33
	23	α Hydræ	E.	12.8	15.5	16.9	23.1	25.2	27.2	33.5	35.0	37.5	21 25.19	− 0.60	− 1.00	− 0.89	9 21 23.70	+ 0.08
	24	Venus I, N. . .	E.	37.8	40.4	42.0	48.4	50.5	52.6	59.1	0.7	3.5	28 50.56	− 0.65	. .	− 0.89	9 28 49.02	+ 0.47
	25	Venus S. . . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	26	ε Leonis	E.	30.0	32.8	34.6	41.3	43.5	45.8	52.6	54.2	57.0	38 43.53	− 0.68	+ 0.87	− 0.89	9 38 41.96	− 0.08
	27	μ^1 Bootis	E.	32.0	35.4	37.5	45.0	47.6	50.2	58.0	59.9	3.1	19 47.63	− 0.75	− 0.96	− 1.03	15 19 45.85	− 0.08
	28	B. A. C. 5113 . .	E.	8.5	12.4	14.6	23.9	27.0	30.0	39.0	41.5	45.0	25 26.88	− 0.82	. .	− 1.03	15 25 25.03	− 2.23
	29	XV, 16	E.	. .	. .	41.8	44.2	46.6	48.9	51.4	. .	. .	29 46.58	− 0.57	. .	− 1.03	15 29 44.98	− 2.05
	30	XV, 17	E.	. .	. .	59.7	2.0	4.4	6.8	11.4	12.9	15.8	32 2.07	− 0.57	. .	− 1.03	15 32 0.37	− 2.07
	31	XV, 19	E.	. .	. .	52.0	54.4	56.8	59.2	1.6	. .	. .	33 56.80	− 0.56	. .	− 1.03	15 33 55.21	− 2.13
	32	ε Serpentis . . .	E.	23.5	26.1	27.7	33.8	35.9	37.9	44.0	45.6	48.1	44 35.84	− 0.63	− 1.05	− 1.04	15 44 34.07	− 0.09
	33	δ Scorpii	E.	43.6	46.4	48.2	52.6	57.0	1.3	5.8	7.5	10.3	52 56.97	− 0.58	− 1.10	− 1.04	15 52 55.35	+ 0.07
	34	β^1 Scorpii	E.	. .	. .	. .	. .	. .	. .	19.4	20.9	23.5	58 10.62	− 0.58	− 1.12	− 1.04	15 58 9.00	+ 0.11
	35	B. A. C. 5426 . .	E.	44.5	47.2	48.8	55.2	57.4	59.6	6.0	7.7	10.4	9 57.42	− 0.67	. .	− 1.05	16 9 55.70	− 2.08
	36	XVI, 5	E.	47.8	51.3	53.5	1.0	3.9	6.6	14.5	16.6	20.0	14 3.91	− 0.55	. .	− 1.05	16 14 2.31	− 2.58
	37	B. A. C. 5479 . .	E.	. .	. .	36.0	38.4	40.9	43.4	46.0	. .	. .	17 40.94	− 0.73	. .	− 1.05	16 17 39.16	− 2.19
	38	XVI, 9	E.	39.3	42.1	44.0	50.7	53.0	55.3	2.2	4.0	6.9	22 53.06	− 0.57	. .	− 1.05	16 22 51.44	− 2.38
	39	XVI, 10	E.	31.0	33.8	35.5	42.0	44.1	46.5	53.0	54.6	57.5	24 44.22	− 0.58	. .	− 1.05	16 24 42.59	− 2.31
	40	B. A. C. 5549 . .	E.	. .	. .	35.7	38.8	42.0	45.3	48.5	. .	. .	29 42.06	− 0.84	. .	− 1.06	16 29 40.16	− 2.48
	41	XVI, 15	E.	57.5	0.4	1.9	8.5	10.8	13.0	19.8	21.4	24.0	36 10.81	− 0.58	. .	− 1.06	16 36 9.17	− 2.38
	42	XVI, 20	E.	11.3	14.4	16.0	23.2	25.7	28.0	35.3	37.0	40.0	40 25.66	− 0.56	. .	− 1.07	16 40 24.03	− 2.52
	43	XVI, 23	E.	3.0	5.9	7.6	14.2	16.5	18.7	25.2	27.0	29.7	49 16.42	− 0.58	. .	− 1.07	16 49 14.77	− 2.43
	44	κ Ophiuchi . . .	E.	33.7	36.4	38.0	44.1	46.3	48.4	54.5	56.0	58.7	51 46.23	− 0.64	− 1.12	− 1.07	16 51 44.52	+ 0.09
	45	d Herculis . . .	E.	46.6	49.6	51.5	. .	. .	. .	11.1	13.0	16.3	57 1.35	− 0.73	. .	− 1.07	16 56 59.55	+ 0.17
	46	a^1 Herculis . . .	E.	45.4	48.0	49.7	56.0	58.0	0.2	6.6	8.0	10.7	8 58.07	− 0.66	− 1.01	− 1.07	17 8 56.34	− 0.04
	47	δ Ursæ Minoris. .	E.	53.0	36.0	0.5	. .	. .	29.5	38.5	3.5	46.0	13 19.71	− 4.80	. .	− 1.10	18 13 13.81	− 0.10
	48	Durch. 68°, 446, S.P.	E.	. .	. .	11.0	4.2	59.0	53.0	48.0	. .	. .	24 59.04	+ 0.19	. .	− 1.10	6 24 58.13	+ 1.21
	49	Durch. 68°, 447, S.P.	E.	. .	. .	. .	. .	. .	. .	32.0	27.5	20.6	27 54.61	+ 0.19	. .	− 1.10	6 27 53.72	+ 1.28
	50	1 Aquilæ	E.	. .	. .	. .	. .	. .	. .	33.7	35.0	37.6	28 25.28	− 0.60	− 1.14	− 1.10	18 28 23.58	+ 0.11

20, 44. Telescope micrometer reading decreased one revolution in reduction.
29. Bisections at wires II and III, and reading decreased five revolutions in reduction.
30, 37, 47. Bisections at sets B and D.
31. Bisections at wires V and VI.
48. Wire B used.

Number	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	252 12	10 17.3	13.4	22.0	26.4	32	. .	360	. .	243	. .	70.5	77 45 52.4	. .	+ 4 14.0	128 56 27.6	−10.3
2	6 32	14.3	13.0	20.5	24.3	37	960	950	. .	. .	. .	70.5	353 24 44.2	. .	− 6.5	44 30 58.9	− 2.3
3	6 32	14.3	13.0	20.5	24.3	32	. .	. .	. .	280	190	70.5	353 23 17.4	. .	− 6.6	44 29 32.0	− 2.3
4	283 50	9.0	5.5	13.9	18.5	35	890	850	. .	. .	. .	70.5	76 6 5.1	. .	+ 3 44.2	127 16 10.5	− 7.7
5	72 10	10.7	5.5	13.5	18.3	37	. .	. .	. .	290	. .	70.5	287 46 26.7	. .	− 2 54.4	338 49 53.5	+ 4.8
6	72 14	20.7	16.0	24.4	28.3	34	(.	300	. .	315	. .	70.5	287 41 51.7	. .	− 2 55.3	338 45 17.6	+ 5.0
7	53 46	17.4	13.9	22.5	25.6	31	645	. .	712	. .	709	70.5	306 9 9.8	. .	− 1 17.3	357 14 13.7	+ 0.8
8	334 44	17.0	13.2	20.6	26.5	37	. .	250	. .	228	. .	70.5	25 12 34.4	. .	+ 26.7	76 19 22.3	0.0
9	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
10	80 44	14.2	10.0	17.3	21.0	30	090	218	. .	. .	. .	70.5	279 10 31.6	65.5	− 5 37.0	330 11 15.8	. .
11	349 26	15.0	12.8	21.6	27.2	34	177	120	. .	. .	. .	71.0	10 29 47.3	. .	+ 10.5	61 36 19.0	+ 0.2
12	335 32	8.5	6.1	13.6	18.1	36	. .	010	. .	970	. .	71.0	24 24 8.1	64.3	+ 25.8	75 30 55.1	− 1.1
13	337 18	17.2	16.5	24.4	29.1	34	. .	. .	. .	370	260	69.1	22 37 51.2	. .	+ 23.1	73 44 35.5	− 1.2
14	312 42	15.0	13.2	23.7	27.3	32	. .	525	. .	470	. .	69.1	47 13 20.8	79.5	+ 59.7	98 20 41.7	− 2.2
15	349 32	13.0	12.3	20.8	25.3	32	. .	985	. .	910	. .	69.1	10 23 26.0	. .	+ 10.1	61 29 57.3	− 1.2
16	320 40	14.4	14.5	24.0	28.7	36	. .	430	. .	365	. .	69.1	39 16 21.2	. .	+ 45.1	90 23 27.5	− 1.7
17	319 46	18.0	17.8	27.7	0.7	33	. .	700	. .	645	. .	69.1	40 9 42.6	. .	+ 46.5	91 16 50.3	− 2.3
18	328 26	19.9	18.2	23.9	1.8	34	. .	860	. .	805	. .	69.1	31 30 0.3	. .	+ 33.8	82 39 55.3	− 1.8
19	343 54	. .	26.9	. .	9.8	38	630	590	. .	. .	. .	69.1	16 3 7.2	85.5	+ 15.7	67 9 44.1	. .
20	343 22	. .	27.4	. .	15.1	37	. .	. .	. .	650	625	69.1	16 34 39.4	. .	+ 16.3	67 41 16.9	. .
21	327 56	21.5	21.5	0.7	3.6	35	530	485	. .	. .	. .	69.1	32 0 13.6	. .	+ 34.0	83 7 8.8	+ 0.8
22	337 26	15.2	12.8	23.7	27.3	33	. .	570	. .	480	. .	69.1	22 29 36.6	. .	+ 22.6	73 36 20.4	. .
23	312 56	20.9	21.7	29.9	2.9	32	. .	625	. .	530	. .	69.1	46 59 28.6	. .	+ 58.2	98 6 48.0	− 0.3
24	337 44	22.5	23.0	0.5	5.3	32	760	. .	. .	. .	715	69.1	22 11 32.8	87.5	+ 22.2	73 18 16.2	. .
25	337 44	22.5	23.0	0.5	5.3	33	. .	685	. .	650	. .	69.1	22 11 46.9	. .	+ 22.2	73 18 30.3	. .
26	345 24	19.6	18.7	29.5	1.8	35	. .	075	. .	010	. .	69.1	14 32 5.0	. .	+ 14.1	65 38 40.3	− 1.2
27	353 52	20.2	18.2	27.3	0.5	36	. .	190	. .	165	. .	70.5	1 4 23.0	. .	+ 1.0	52 10 45.2	+ 0.1
28	9 12	19.6	16.7	26.9	29.0	38	. .	375	. .	335	. .	70.5	350 44 55.5	. .	− 9.1	41 51 7.6	+ 3.4
29	204 0	20.0	15.3	26.1	1.0	36	110	095	. .	. .	. .	70.5	65 55 3.8	. .	+ 2 3.7	117 3 28.7	−15.4
30	203 50	19.5	17.8	26.0	0.3	33	250	. .	. .	. .	240	70.5	66 5 37.2	. .	+ 2 4.7	117 14 3.1	−15.4
31	259 38	25.5	24.0	0.5	5.2	33	. .	. .	. .	040	020	70.5	70 17 39.4	. .	+ 2 33.5	121 26 34.1	−16.5
32	325 54	22.3	19.3	28.3	0.8	33	. .	090	. .	050	. .	70.5	34 1 36.4	74.0	+ 37.5	85 8 35.1	0.0
33	298 48	24.2	21.5	28.8	3.8	33	. .	920	. .	895	. .	70.5	61 7 50.9	. .	+ 1 40.5	112 15 52.6	+ 1.0
34	301 36	21.2	18.6	26.9	1.4	34	. .	. .	. .	145	130	70.5	58 19 52.2	. .	+ 1 29.9	109 27 43.3	0.0
35	340 10	20.0	17.2	25.6	0.3	33	. .	620	. .	535	. .	70.5	19 45 42.3	. .	+ 20.0	70 52 23.5	− 3.4
36	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
37	355 8	29.8	28.2	6.8	9.2	33	105	. .	. .	. .	065	70.5	4 47 45.0	. .	+ 4.7	55 54 10.9	− 0.5
38	294 10	23.1	20.2	29.2	1.5	33	. .	490	. .	450	. .	70.5	65 45 43.1	. .	+ 2 2.9	116 54 7.2	−13.4
39	299 52	18.8	17.1	24.7	29.1	34	. .	475	. .	405	. .	70.5	60 3 54.4	. .	+ 1 36.3	111 11 51.9	−12.0
40	11 26	27.2	24.5	4.8	7.4	31	. .	. .	. .	670	600	70.5	348 29 21.2	. .	− 11.3	39 35 31.1	+ 1.0
41	298 34	21.5	21.0	28.4	1.8	34	. .	050	. .	920	. .	70.5	61 21 50.7	. .	+ 1 41.6	112 29 53.5	−11.8
42	290 6	26.5	25.2	2.5	6.7	33	. .	875	. .	815	. .	70.5	69 49 53.1	. .	+ 2 30.3	120 58 44.6	−13.3
43	298 8	26.0	23.5	3.1	5.3	38	. .	030	. .	950	. .	70.5	61 48 55.8	. .	+ 1 43.5	112 57 0.5	−11.4
44	330 38	23.4	22.6	29.3	3.6	38	. .	795	. .	745	. .	70.5	29 18 50.4	. .	+ 31.3	80 25 42.9	+ 0.5
45	354 48	27.9	25.4	5.3	7.5	35	. .	975	. .	940	. .	70.5	5 8 27.1	. .	+ 5.0	56 14 53.3	+ 0.6
46	335 34	21.5	19.6	27.1	1.7	31	. .	295	. .	195	. .	70.5	24 21 8.3	. .	+ 25.2	75 27 54.7	− 0.3
47	47 38	21.8	20.3	28.0	0.0	35	585	605	. .	. .	. .	70.5	312 18 15.7	. .	− 1 1.3	3 23 35.6	− 1.0
48	72 12	19.0	14.5	22.3	27.0	33	. .	. .	. .	250	280	70.5	287 46 6.9	. .	− 2 52.2	338 49 35.9	+ 4.6
49	72 12	19.0	14.5	22.3	27.0	26	. .	. .	. .	520	595	70.5	287 41 50.4	. .	− 2 53.0	338 45 18.6	+ 4.7
50	312 44	22.0	18.0	26.5	2.5	36	. .	. .	. .	635	585	70.5	47 12 30.4	. .	+ 1 0.3	98 19 51.9	− 0.3

No.	Barom.	At. Ther.
	in.	°
19	30.17	68.5
20	30.15	66.3
22	30.17	74.5
24	30.15	78.5
25	30.12	82.5
27	30.03	76.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
19	− 2.4	+ 15 46.4	. .	+ 15 44.0
20	− 2.4	− 15 46.4	. .	− 15 48.8
22	− 4.8	+ 4.8	. .	0.0
24	− 2.6	+ 7.1	. .	+ 4.5
25	− 2.6	− 7.1	+ 0.1	− 9.6

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
July 7	1	α Lyræ	E.	28.8	32.1	34.0	42.0	44.6	47.1	55.0	57.0	0.2	32 44.53	— 0.76	— 1.02	— 1.10	18 32 42.67	— 0.06
	2	51 Cephei, S. P. . .	E.	. .	. .	51.0	6.5	24.5	43.0	0.0	. .	. .	40 25.00	+ 4.81	. .	— 1.11	6 40 28.76	+ 0.24
	3	β Lyræ	E.	15.2	18.2	20.0	27.5	29.8	32.2	39.5	41.4	44.5	45 29.81	— 0.73	— 1.05	— 1.11	18 45 27.97	— 0.03
	4	B. A. C. 6491 . .	E.	3.5	6.6	8.5	15.6	18.0	20.5	27.8	29.5	32.6	54 18.07	— 0.72	. .	— 1.11	18 54 16.24	— 2.32
	5	B. A. C. 6542 . .	E.	13.9	16.8	18.5	25.1	27.4	29.6	36.2	37.9	40.8	1 27.36	— 0.66	. .	— 1.12	19 1 25.55	— 2.30
	6	B. A. C. 6566 . .	E.	. .	. .	18.3	21.6	24.7	27.9	31.2	. .	. .	5 24.74	— 0.82	. .	— 1.12	19 5 22.78	— 2.49
	7	B. A. C. 6589 . .	E.	. .	. .	47.8	50.0	52.2	54.3	56.5	. .	. .	10 52.16	— 0.68	. .	— 1.12	19 10 50.36	— 2.30
	8	δ Aquilæ	E.	0.5	3.1	4.7	10.9	12.9	15.0	21.0	22.6	25.2	19 12.88	— 0.65	— 1.13	— 1.12	19 19 11.13	+ 0.00
	9	B. A. C. 6674 . .	E.	18.3	21.3	23.0	29.5	31.8	34.0	40.8	42.5	45.4	23 31.84	— 0.66	. .	— 1.12	19 23 30.03	— 2.28
	10	κ Aquilæ	E.	58.6	1.4	2.8	9.0	11.0	13.1	19.2	20.9	23.5	30 11.06	— 0.66	— 1.22	— 1.13	19 30 9.35	+ 0.13
	11	γ Aquilæ	E.	7.8	10.4	12.0	18.1	20.3	22.4	28.5	30.1	32.8	40 20.27	— 0.66	— 1.12	— 1.13	19 40 18.49	+ 0.02
	12	Comet Coggia, S. P.	E.	46.0	40.8	37.5	26.0	22.0	17.8	6.2	3.0	58.6	43 21.99	— 0.02	. .	— 1.13	7 43 20.83	. .
	13	β Aquilæ	E.	59.3	1.9	3.5	9.5	11.6	13.7	19.9	21.4	24.0	49 11.64	— 0.63	— 1.24	— 1.13	19 49 9.88	+ 0.14
8	14	XVI, 5	Sk.	48.1	51.6	53.6	1.6	4.3	6.8	14.9	17.0	20.3	14 4.24	— 0.5	. .	— 1.54	16 14 2.16	— 2.58
	15	XVI, 13 . . .	Sk.	12.0	15.1	16.9	24.0	26.4	28.6	35.6	37.5	40.3	31 26.27	— 0.50	. .	— 1.54	16 31 24.17	— 2.48
	16	η Herculis . .	Sk.	23.2	26.6	28.6	36.5	39.1	41.7	49.6	51.6	55.0	38 39.10	— 0.75	— 1.45	— 1.54	16 38 36.81	— 0.08
	17	B. A. C. 5677 . .	Sk.	22.6	25.4	27.0	34.0	36.3	38.5	45.2	46.9	49.8	46 36.19	— 0.63	. .	— 1.55	16 46 33.90	— 2.19
	18	B. A. C. 5706 . .	Sk.	28.9	32.8	34.9	43.8	46.8	49.8	58.8	0.9	4.8	50 46.84	— 0.80	. .	— 1.55	16 50 44.49	— 2.42
	19	d Herculis . .	Sk.	47.0	50.0	51.9	59.3	1.7	4.1	11.0	13.3	16.5	57 1.71	— 0.7	. .	— 1.55	16 56 59.44	+ 0.06
	20	B. A. C. 5776 . .	Sk.	15.0	19.0	21.4	31.0	34.0	37.1	46.5	49.0	52.7	1 33.97	— 0.8	. .	— 1.55	17 1 31.66	— 2.49
	21	a¹ Herculis . .	Sk.	45.6	48.4	50.0	56.4	58.4	0.6	6.9	8.5	11.0	8 58.42	— 0.6	— 1.3	— 1.55	17 8 56.23	— 0.15
	22	XVII, 5 . . .	Sk.	2.8	5.9	7.5	14.4	16.6	19.0	26.0	27.6	30.5	18 16.70	— 0.5	. .	— 1.55	17 18 14.59	— 2.00
	23	XVII, 10 . . .	Sk.	34.2	37.3	39.2	45.2	48.7	52.0	58.3	59.8	3.0	29 48.63	— 0.5	. .	— 1.55	17 29 46.53	— 2.78
	24	XVII, 20 . . .	Sk.	19.7	22.9	24.7	32.3	34.8	37.3	44.7	46.6	49.7	44 34.74	— 0.5	. .	— 1.56	17 44 32.63	— 2.98
	25	B. A. C. 6129 . .	Sk.	37.7	41.5	43.7	53.2	56.0	59.3	8.0	10.8	14.7	59 56.17	— 0.8	. .	— 1.56	17 59 53.79	— 2.52
	26	δ Ursæ Minoris . .	Sk.	. .	. .	10.0	45.0	17.5	51.5	27.5	. .	. .	13 18.30	— 5.0	. .	— 1.56	18 13 11.60	— 2.13
	27	XVIII, 13 . . .	Sk.	15.4	18.7	20.6	28.2	30.9	33.4	40.9	42.8	46.0	25 30.77	— 0.55	. .	— 1.56	18 25 28.66	— 3.14
	28	1 Aquilæ	Sk.	. .	. .	21.6	23.7	25.8	27.8	29.8	. .	. .	18 25.74	— 0.50	— 1.60	— 1.57	18 28 23.58	+ 0.10
	29	B. A. C. 6365 . .	Sk.	44.9	48.1	50.0	58.0	0.6	3.1	11.0	12.9	16.0	36 0.51	— 0.72	. .	— 1.57	18 35 58.10	— 2.37
	30	51 Cephei, S. P. . .	Sk.	. .	. .	47.0	5.5	. .	. .	. .	. .	. .	40 22.80	+ 5.10	. .	— 1.57	6 40 26.42	— 2.19
	31	B. A. C. 6473 . .	Sk.	38.6	41.8	43.6	52.0	54.8	57.6	5.6	7.7	11.0	50 54.74	— 0.70	. .	— 1.57	18 50 52.41	— 2.39
	32	B. A. C. 6491 . .	Sk.	3.8	6.7	8.7	16.0	18.4	20.9	28.1	29.8	32.9	54 18.38	— 0.71	. .	— 1.57	18 54 16.09	— 2.33
	33	B. A. C. 6623 . .	Sk.	55.8	0.1	2.7	12.8	16.6	19.8	30.0	32.3	36.8	14 16.32	— 0.87	. .	— 1.58	19 14 13.87	— 2.54
	34	δ Aquilæ	Sk.	. .	. .	9.3	11.3	13.3	15.4	17.4	. .	. .	19 13.34	— 0.61	— 1.60	— 1.58	19 19 11.15	+ 0.07
	35	κ Aquilæ	Sk.	. .	. .	7.4	9.4	11.5	13.5	15.6	. .	. .	30 11.48	— 0.50	— 1.63	— 1.58	19 30 9.31	+ 0.09
	36	ε Piscium . . .	Sk.	15.4	17.9	19.5	25.6	27.7	29.8	36.0	37.5	40.0	56 27.71	— 0.63	— 1.60	— 1.65	0 56 25.43	+ 0.03
	37	Polaris	Sk.	. .	. .	45.0	10.5	36.0	3.0	27.5	. .	. .	12 36.40	—12.12	. .	— 1.65	1 12 22.63	— 0.12
	38	θ¹ Ceti	Sk.	34.5	37.2	38.7	44.9	47.0	49.0	55.2	56.6	59.3	17 46.93	— 0.50	— 1.74	— 1.65	1 17 44.69	+ 0.11
	39	η Piscium . . .	Sk.	35.1	37.8	39.4	45.8	47.8	49.9	56.2	57.8	0.4	24 47.80	— 0.60	— 1.66	— 1.65	1 24 45.49	+ 0.08
	40	α Ceti	Sk.	32.2	34.7	36.3	42.5	44.5	46.5	52.6	54.0	56.7	55 44.44	— 0.61	— 1.70	— 1.67	2 55 42.10	+ 0.05
	41	α Persei	Sk.	4.0	8.0	10.2	19.7	22.9	25.8	35.3	37.8	41.5	15 22.80	— 0.80	. .	— 1.67	3 15 20.27	+ 0.15
	42	Moon II, N. . .	Sk.	42.7	45.4	47.0	53.9	56.0	58.2	5.0	6.6	9.3	25 56.01	— 0.68	. .	— 1.67	3 25 53.66	—71.71
	43	δ Persei	Sk.	42.0	46.0	48.0	57.0	0.0	3.0	12.1	14.6	18.2	34 0.10	— 0.84	. .	— 1.67	3 33 57.50	+ 0.09
	44	η Tauri	Sk.	49.0	51.9	53.4	0.1	2.3	4.6	11.4	13.0	15.8	40 2.39	— 0.69	— 1.68	— 1.68	3 40 0.02	0.00
	45	α Tauri	S.	31.1	34.0	35.5	41.1	44.0	46.3	52.6	54.2	56.9	28 43.97	— 0.68	— 1.71	— 1.78	4 28 41.51	— 0.09
	46	β Orionis . . .	S.	21.6	23.0	27.0	29.2	31.3	33.3	35.3	39.5	41.0	8 31.24	— 0.67	— 1.75	— 1.79	5 8 28.78	— 0.04
9	47	Sun I, N. . . .	S.	26.8	29.7	31.3	38.0	40.1	42.4	49.1	50.9	53.4	13 40.19	— 0.69	. .	— 1.81	7 13 37.69	. .
	48	Sun II, S.. . .	S.	43.7	46.5	47.9	54.9	56.9	59.0	5.8	7.4	10.1	15 56.91	— 0.69	. .	— 1.81	7 15 54.41	. .
	49	Mercury I, C. . .	S.	. .	. .	52.2	54.2	56.5	58.5	2.7	4.3	7.0	42 54.26	— 0.68	. .	— 1.82	8 42 51.76	+ 0.34
	50	Venus I. . . .	S.	58.7	1.4	3.0	9.5	11.6	13.8	20.0	21.6	24.3	38 11.54	— 0.68	. .	— 1.83	9 38 9.03	+ 0.47

42. Bisections at sets B and D.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	359 42	10 21.5	17.7	27.3	29.3	33	. .	215	. .	185	. .	70.5	0 13 37.4	. .	+ 0.2	51 19 58.8	− 0.7
2	53 46	22.5	19.5	28.2	1.3	31	155	. .	125	. .	145	70.5	306 9 6.9	. .	− 1 16.3	357 14 11.8	− 0.7
3	354 16	22.7	21.8	29.8	1.5	36	. .	665	. .	560	. .	70.5	5 40 32.1	. .	+ 5.6	56 46 58.9	− 0.7
4	353 34	21.2	19.8	26.8	29.7	36	. .	705	. .	650	. .	70.5	6 22 31.0	. .	+ 6.2	57 28 58.4	− 3.4
5	345 6	23.4	20.7	28.9	1.7	34	745	670	. .	. .	. .	70.5	14 50 2.3	. .	+ 14.8	65 56 38.3	− 3.3
6	11 12	21.5	19.3	28.8	0.4	35	. .	. .	. .	380	365	70.5	348 44 12.4	. .	− 11.1	39 50 22.5	− 4.1
7	342 14	20.5	17.5	26.0	0.2	39	660	. .	. .	. .	520	70.5	17 43 14.6	. .	+ 17.9	68 49 53.7	− 3.2
8	323 56	22.4	20.3	27.9	1.8	38	. .	785	. .	750	. .	70.5	36 1 4.0	. .	+ 40.7	87 8 5.9	− 0.3
9	345 28	24.4	21.2	29.1	1.3	37	. .	620	. .	570	. .	70.5	14 28 47.1	. .	+ 14.4	65 35 22.7	− 3.2
10	313 44	19.8	17.7	25.9	1.1	30	. .	925	. .	895	. .	70.5	46 11 1.7	. .	+ 58.2	97 18 21.1	+ 0.7
11	331 22	15.6	12.2	21.2	24.8	37	810	785	. .	. .	. .	70.5	28 34 42.1	70.0	+ 30.5	79 41 33.8	+ 0.2
12	82 2	22.7	20.4	26.2	0.0	36	600	535	435	. .	. .	70.5	277 54 28.5	. .	− 6 20.5	328 54 29.2	. .
13	327 8	11 0.7	29.1	7.2	9.6	31	. .	855	. .	835	. .	70.5	32 47 26.6	. .	+ 36.1	83 54 23.9	− 0.2
14	281 12	10 23.8	26.0	28.9	2.1	34	. .	701	. .	682	. .	69.5	78 44 2.4	. .	+ 4 27.2	129 54 50.8	−16.6
15	290 52	21.5	19.4	26.2	29.8	35	. .	514	. .	432	. .	69.5	69 4 11.0	. .	+ 2 22.2	120 12 54.4	−12.7
16	0 12	19.4	17.5	25.0	28.1	34	. .	. .	. .	282	228	69.5	359 43 51.6	77.8	− 0.3	50 50 12.5	+ 0.8
17	345 54	22.2	20.6	25.8	1.7	31	718	761	. .	. .	. .	69.5	14 1 14.8	. .	+ 13.7	65 7 49.7	− 2.3
18	7 48	24.5	24.3	2.7	4.0	38	. .	. .	. .	816	750	69.5	352 9 7.5	. .	− 7.6	43 15 21.1	+ 0.5
19	354 48	23.4	21.5	28.5	1.7	36	382	340	. .	. .	. .	69.5	5 8 26.9	. .	+ 4.9	56 14 53.0	+ 0.5
20	10 0	14.8	12.3	19.8	22.8	31	. .	. .	. .	515	455	69.5	349 55 4.3	. .	− 9.8	41 1 15.7	+ 0.3
21	335 34	20.6	16.6	26.0	0.7	31	363	400	. .	. .	. .	69.5	24 21 7.6	. .	+ 24.9	75 27 53.7	− 1.2
22	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
23	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
24	285 30	13.3	. .	18.7	. .	34	. .	613	. .	590	. .	69.5	74 25 49.9	. .	+ 3 14.2	125 35 25.3	− 9.8
25	9 30	13.3	11.6	18.6	22.3	36	. .	290	. .	180	. .	69.5	350 26 15.5	. .	− 9.3	41 32 27.4	− 1.7
26	47 38	25.8	24.0	1.4	4.4	35	280	. .	285	. .	275	69.5	312 18 13.0	. .	− 1 0.4	3 23 33.8	− 2.5
27	254 38	26.8	24.5	1.5	5.5	36	. .	513	575	. .	. .	69.5	75 18 32.2	. .	+ 3 26.2	126 28 19.6	− 6.5
28	312 44	20.5	17.3	25.4	1.0	36	. .	. .	. .	830	849	69.5	47 12 31.8	. .	+ 59.4	98 19 52.4	+ 0.3
29	359 18	24.0	23.2	29.8	3.0	36	898	903	. .	. .	. .	69.5	0 38 36.4	. .	+ 0.6	51 44 58.2	− 2.9
30	53 46	22.5	18.6	27.8	0.4	31	092	117	. .	. .	. .	69.5	306 9 4.8	. .	− 1 15.2	357 14 10.8	− 1.5
31	2 30	12.4	11.7	19.0	24.0	39	. .	990	. .	947	. .	69.5	357 27 12.9	. .	− 2.4	48 33 31.7	− 3.2
32	353 34	19.3	16.5	24.4	29.1	36	. .	879	. .	793	. .	69.5	6 22 30.4	76.1	+ 6.2	57 28 57.8	− 3.1
33	14 10	17.2	14.4	22.1	24.9	33	. .	948	. .	966	. .	69.5	345 45 43.9	. .	− 14.0	36 51 51.1	− 4.2
34	323 56	25.5	23.9	1.2	4.9	38	. .	. .	. .	702	655	69.5	36 1 5.3	. .	+ 40.0	87 8 6.5	+ 0.4
35	313 44	24.0	21.7	28.0	3.1	30	. .	. .	. .	828	792	69.5	46 11 2.6	. .	+ 57.4	97 18 21.2	+ 0.9
36	328 16	22.4	20.6	29.0	2.3	35	. .	509	. .	550	. .	69.9	31 40 14.4	73.3	+ 34.2	82 47 9.8	− 0.7
37	49 40	14.4	10.0	19.8	22.6	37	820	835	835	854	865	69.9	310 16 40.5	. .	− 1 5.2	1 21 56.5	+ 0.1
38	312 14	15.7	14.2	24.4	26.6	36	. .	694	. .	650	. .	69.9	47 42 25.9	. .	+ 1 0.7	98 49 47.8	+ 0.7
39	335 44	21.1	20.1	27.0	0.5	32	. .	202	. .	232	. .	69.9	24 11 22.3	. .	+ 24.8	75 18 8.3	− 0.1
40	324 38	24.6	24.0	2.3	4.6	31	. .	021	. .	036	. .	69.9	35 17 8.2	. .	+ 38.7	86 24 8.1	− 1.9
41	10 26	29.5	20.2	29.9	1.5	31	. .	. .	. .	452	390	69.9	349 29 14.1	. .	− 10.1	40 35 25.2	+ 1.8
42	341 34	19.4	17.1	25.8	29.6	34	150	. .	000	. .	930	69.9	18 21 48.2	82.6	+ 18.1	69 28 27.5	. .
43	8 26	19.8	20.0	28.3	0.0	37	. .	940	. .	887	. .	69.9	351 30 49.6	. .	− 8.1	42 37 2.7	− 1.2
44	344 46	18.9	16.7	24.1	28.2	36	. .	735	. .	679	. .	69.9	15 10 28.4	84.8	+ 14.7	66 17 4.3	− 0.2
45	337 18	24.6	27.3	1.0	6.4	34	. .	000	. .	950	. .	68.6	22 37 53.0	86.5	+ 22.6	73 44 36.8	+ 0.3
46	312 42	11 2.7	5.3	9.6	15.4	31	. .	500	. .	376	. .	68.6	47 13 22.5	90.5	+ 58.0	98 20 41.7	− 1.8
47	343 40	10 16.0	15.5	24.2	25.2	38	. .	870	. .	. .	. .	68.6	16 16 58.3	96.0	+ 15.5	67 23 35.0	. .
48	343 8	26.0	25.4	3.5	5.4	36	. .	. .	. .	260	240	68.6	16 48 28.6	. .	+ 16.1	67 55 5.9	. .
49	336 50	22.1	25.1	28.1	3.2	37	. .	. .	. .	232	150	68.6	23 6 39.6	97.7	+ 22.1	74 13 22.9	. .
50	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .

No.	Barom.	At. Ther.
	in.	°
41	29.99	72.0
42	29.87	79.5
43	29.86	78.0
44	29.87	72.9
45	29.90	78.6
46	29.90	79.8
47	29.91	81.0
48	29.93	87.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
42	−18 24.3	+ 16 7.5	. .	− 2 16.8
47	− 2.4	+ 15 45.4	. .	+ 15 43.0
48	− 2.5	− 15 45.4	. .	− 15 47.9
49	− 5.1	. .	+ 0.3	− 4.8

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
July 9	1	α Leonis	S.	29.9	32.5	34.1	40.4	42.4	44.5	50.9	52.4	55.6	1 42.46	− 0.68	− 1.93	− 1.83	10 1 39.95	+ 0.06
	2	β Orionis	Sk.	19.1	21.7	23.1	29.4	31.5	33.5	39.8	41.2	43.9	8 31.47	− 0.67	− 1.96	− 2.01	5 8 28.79	− 0.05
	3	β Tauri	Sk.	8.5	11.4	12.8	19.9	22.3	24.8	31.6	33.3	36.3	18 22.32	− 0.78	− 1.94	− 2.02	5 18 19.52	− 0.10
	4	δ Orionis	Sk.	. .	. .	32.6	34.6	36.8	38.9	40.9	. .	. .	25 36.80	− 0.69	− 2.03	− 2.02	5 25 34.09	− 0.02
10	5	Sun I, S.	Sk.	. .	. .	41.5	43.6	45.8	48.2	50.3	. .	. .	17 45.88	− 0.75	. .	− 2.05	7 17 43.08	. .
	6	Sun II, N.	Sk.	49.3	52.0	53.6	0.3	2.5	4.7	11.3	12.9	15.8	20 2.49	− 0.75	. .	− 2.05	7 19 59.60	. .
	7	Mercury I, N.	Sk.	3.9	6.4	8.0	14.4	16.5	18.7	25.0	26.5	29.2	43 16.51	− 0.73	. .	− 2.08	8 43 13.70	+ 0.35
	8	θ Ursæ Majoris	Sk.	8.2	12.6	14.8	25.0	28.6	31.6	41.7	44 2	48.4	24 28.34	− 0.96	. .	− 2.09	9 24 25.20	+ 0.14
	9	Venus I, N.	Sk.	36.9	39.6	41.1	47.6	49.7	51.8	58.1	59.8	2.4	42 49.67	− 0.73	. .	− 2.09	9 42 46.85	+ 0.47
	10	α Leonis	Sk.	30.3	32.7	34.5	40.7	42.7	44.8	51.1	52.6	55.1	1 42.72	− 0.72	− 2.15	− 2.10	10 1 39.90	+ 0.01
	11	γ^1 Leonis	Sk.	51.6	54.3	55.9	2.4	4.6	6.9	13.3	15.0	17.8	13 4.64	− 0.74	− 2.16	− 2.10	10 13 1.80	+ 0.04
12	12	α Aurigæ	S.	. .	. .	21.0	23.9	26.9	29.8	32.8	. .	. .	7 26.88	− 0.80	. .	− 3.25	5 7 22.83	− 0.08
	13	β Orionis	S.	. .	. .	28.6	30.7	32.7	34.7	36.8	. .	. .	8 32.70	− 0.62	− 3.17	− 3.25	5 8 28.83	− 0.08
	14	β Tauri	S.	9.7	12.6	14.2	21.2	23.6	25.9	32.9	34.6	37.6	18 23.59	− 0.71	− 3.21	− 3.25	5 18 19.63	− 0.06
	15	ϵ Orionis	S.	. .	. .	50.9	53.0	55.1	57.0	1.2	2.8	5.3	29 53.01	− 0.62	− 3.25	− 3.25	5 29 49.14	− 0.01
	16	α Orionis	S.	12.4	15.0	16.6	22.9	25.0	27.0	33.1	34.6	37.3	48 24.88	− 0.65	− 3.26	− 3.26	5 48 20.97	− 0.03
13	17	α Scorpii	S.	33.8	36.5	38.2	45.1	47.4	49.6	56.3	58.0	1.0	21 47.32	− 0.57	− 3.34	− 3.40	16 21 43.35	− 0.07
	18	ζ Ophiuchi	S.	. .	. .	15.3	17.4	19.5	21.6	28.6	. .	. .	30 19.48	− 0.58	− 3.37	− 3.40	16 30 15.50	− 0.03
	19	η Herculis	S.	28.5	30.6	35.7	38.3	41.0	43.6	46.3	51.5	53.5	38 41.00	− 0.71	− 3.44	− 3.40	16 38 36.89	+ 0.05
	20	B. A. C. 5950	S.	27.2	31.6	34.4	. .	. .	. .	3.0	5.7	10.2	29 48.35	− 1.05	. .	− 3.41	17 29 43.89	− 2.03
	21	B. A. C. 5951	S.	36.9	39.6	46.7	50.4	54.6	57.5	1.3	8.4	11.0	29 53.98	− 1.05	. .	− 3.41	17 29 49.52	− 2.63
	22	B. A. C. 6033	S.	35.3	38.3	40.0	46.8	49.1	51.4	58.2	59.9	2.8	43 49.09	− 0.66	. .	− 3.41	17 43 45.02	− 2.28
	23	Anonymous	S.	5.5	9.2	11.4	17.3	. .	. .	. .	. .	. .	55 23.04	− 0.74	. .	− 3.42	17 55 18.88	− 2.44
	24	B. A. C. 6109	S.	. .	. .	. .	. .	30.0	32.8	38.7	41.0	44.4	56 27.05	− 0.74	. .	− 3.42	17 56 22.80	− 2.44
	25	δ Ursæ Minoris	S.	. .	. .	. .	. .	19.8	54.7	. .	. .	. .	13 20.05	− 4.28	. .	− 3.42	18 13 12.35	− 0.45
	26	XVIII, 14	S.	54.9	56.4	1.0	3.4	5.7	8.0	10.3	14.8	16.6	29 5.68	− 0.57	. .	− 3.42	18 29 1.69	− 2.80
	27	β Lyræ	S.	17.4	20.6	22.4	29.7	32.2	34.6	42.1	43.9	47.0	45 32.21	− 0.68	− 3.48	− 3.43	18 45 28.10	+ 0.08
	28	ζ Aquilæ	S.	31.0	33.7	35.4	41.6	43.7	45.8	52.2	53.7	56.2	59 43.70	− 0.62	− 3.57	− 3.43	18 59 39.65	+ 0.22
14	29	α Aurigæ	E.	. .	. .	21.9	24.7	27.8	30.6	33.7	. .	. .	7 27.74	− 0.90	. .	− 3.87	5 7 22.91	− 0.07
	30	β Orionis	E.	21.1	23.7	25.2	31.5	33.5	35.6	41.8	43.4	45.9	8 33.52	− 0.73	− 3.84	− 3.87	5 8 28.92	− 0.03
	31	β Tauri	E.	10.4	13.3	15.0	22.0	24.4	26.7	33.8	35.5	38.4	18 24.39	− 0.84	− 3.83	− 3.87	5 18 19.68	− 0.06
	32	δ Orionis	E.	. .	. .	34.6	36.8	38.9	40.9	42.9	. .	. .	25 38.82	− 0.75	− 3.88	− 3.87	5 25 34.20	− 0.02
	33	ϵ Orionis	E.	41.5	44.0	45.6	51.7	53.8	55.9	2.0	3.5	6.1	29 53.79	− 0.74	− 3.87	− 3.87	5 29 49.18	− 0.01
	34	α Orionis	E.	13.3	15.9	17.5	23.6	25.7	27.7	33.9	35.5	38.0	48 25.68	− 0.77	− 3.90	− 3.88	5 48 21.03	− 0.01
15	35	Sun N.	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	36	Sun S.	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	37	α Hydræ	E.	. .	. .	. .	. .	. .	. .	36.4	38.0	40.6	21 28.19	− 0.73	− 3.87	− 3.93	9 21 23.53	− 0.09
	38	α Leonis	E.	. .	. .	40.4	42.5	44.5	46.6	48.7	. .	. .	1 44.54	− 0.78	− 3.92	− 3.94	10 1 39.82	− 0.06
	39	Venus I, S.	E.	. .	. .	. .	. .	43.0	45.0	49.3	50.9	. .	5 40.89	− 0.78	. .	− 3.94	10 5 36.17	+ 0.44
	40	Venus, N.	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	41	γ^1 Leonis	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	42	β Libræ	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	43	μ^1 Bootis	E.	35.1	38.5	40.1	48.0	50.7	53.4	1.0	3.0	6.4	19 50.72	− 0.85	− 4.00	− 4.02	15 19 45.85	+ 0.03
	44	B. A. C. 5116	E.	. .	. .	25.6	30.0	34.7	39.0	43.6	. .	. .	25 34.58	− 1.13	. .	− 4.03	15 25 29.42	− 2.46
	45	B. A. C. 5146	E.	44.0	46.8	48.4	54.7	57.0	59.1	5.5	7.3	9.9	29 56.97	− 0.76	. .	− 4.03	15 29 52.18	− 1.86
	46	XV, 17	E.	51.3	54.2	55.8	2.9	5.3	7.6	14.5	16.0	19.0	32 5.18	− 0.68	. .	− 4.03	15 32 0.47	− 1.99
	47	α Serpentis	E.	58.1	0.8	2.3	8.5	10.6	12.6	18.8	20.4	22.9	38 10.56	− 0.74	− 4.10	− 4.03	15 38 5.79	+ 0.13
	48	ϵ Serpentis	E.	26.0	29.2	30.8	37.0	39.0	41.0	47.1	48.8	51.4	44 38.99	− 0.73	− 4.15	− 4.03	15 44 34.23	+ 0.12
	49	ζ Ursæ Minoris (R.)	E.	. .	. .	21.4	32.7	42.5	53.0	3.1	. .	. .	48 42.54	+ 1.96	. .	− 4.04	15 48 40.46	+ 0.01
	50	B. A. C. 5400	E.	9.4	13.0	15.1	23.6	26.4	29.3	37.8	40.0	43.6	6 26.47	− 0.90	. .	− 4.04	16 6 21.53	− 2.17

13, 44. Bisections at sets B and D.
49. Bisections at wires V–VII.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″					°	°	″	° ′ ″	°	′ ″	° ′ ″	″
1	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. . .	. .
2	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. . .	. .
3	349 32	10 21.7	21.4	26.0	0.5	32	. .	670	. .	553	. .	69.5	10 23 28.3	92.5	+ 9.8	61 29 59.3	+ 0.8
4	320 40	13.8	. .	18.9	. .	36	. .	. .	. .	750	692	69.5	39 16 23.9	. .	+ 43.8	90 23 28.9	+ 0.2
5	343 0	11 0.5	0.7	7.1	8.2	33	924	972	. .	. .	. .	69.5	16 55 57.8	. .	+ 16.2	68 2 35.2	. .
6	343 32	0.0	1.8	5.9	9.3	35	. .	. .	. .	872	962	69.5	16 24 28.5	97.2	+ 15.6	67 31 5.3	. .
7	336 32	10 21.9	22.4	26.1	29.7	32	. .	090	. .	001	. .	69.5	23 23 19.6	100.9	+ 22.8	74 30 3.6	. .
8	13 18	11 1.3	. .	9.8	. .	36	610	623	. .	. .	. .	69.5	346 38 41.5	. .	− 12.6	37 44 50.1	− 0.2
9	330 34	10 24.6	24.4	9.4	4.0	38	. .	536	. .	485	. .	69.5	23 23 4.3	. .	+ 22.9	74 29 48.4	. .
10	333 38	28.2	27.0	3.6	6.6	35	092	062	. .	. .	. .	69.5	26 18 12.0	97.5	+ 26.2	77 24 59.4	− 0.9
11	341 32	17.3	. .	23.8	. .	37	170	150	. .	. .	. .	69.5	18 24 34.3	. .	+ 17.6	69 31 13.1	− 0.4
12	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. . .	. .
13	312 42	9 20.7	21.0	16.9	23.6	32	690	. .	. .	. .	760	80.8	47 13 21.7	82.6	+ 59.4	98 20 42.3	− 0.4
14	349 32	10 5.9	6.4	1.3	6.3	32	. .	040	. .	100	. .	80.8	10 23 26.3	. .	+ 10.1	61 29 57.6	− 0.8
15	319 46	7.7	8.4	3.7	9.5	32	. .	. .	. .	998	006	80.8	40 9 43.1	83.7	+ 46.2	91 16 50.5	− 1.2
16	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. . .	. .
17	294 56	17.9	15.7	10.8	16.5	37	. .	164	. .	120	. .	80.4	65 0 53.5	. .	+ 1 59.3	116 9 14.0	+ 0.4
18	310 44	11.3	9.5	4.9	10.0	31	. .	328	. .	320	. .	80.4	49 11 18.2	76.2	+ 1 4.7	100 18 44.1	+ 0.7
19	0 12	8.8	7.5	3.6	5.8	33	. .	. .	. .	578	568	80.4	359 43 51.0	. .	− 0.3	50 50 11.9	+ 1.2
20	16 18	4.0	4.6	1.2	3.8	32	956	. .	. .	. .	845	80.4	343 37 37.9	. .	− 16.5	34 43 42.6	+ 1.0
21	16 18	4.0	4.6	1.2	3.8	35	. .	703	. .	624	. .	80.4	343 38 19.7	. .	− 16.4	34 44 24.5	+ 1.0
22	316 44	8.0	5.2	1.1	5.9	40	. .	014	. .	966	. .	80.4	13 13 27.2	. .	+ 13.2	64 20 1.6	− 1.7
23	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. . .	74.0	. .	. . .	. .
24	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. . .	. .
25	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. . .	. .
26	294 42	3.8	1.6	27.7	3.8	38	. .	. .	. .	417	. .	80.4	65 14 59.8	74.3	+ 2 0.8	116 23 21.8	− 5.7
27	354 16	10.2	10.0	4.9	7.6	36	. .	070	. .	990	. .	80.4	5 40 29.8	. .	+ 5.6	56 46 56.6	− 1.3
28	334 44	9.1	7.0	2.5	7.8	36	. .	350	. .	250.	. .	80.4	25 12 32.2	. .	+ 26.3	76 19 19.7	− 1.2
29	6 54	9 28.9	28.3	26.0	28.0	33	490	460	. .	. .	. .	80.3	353 1 40.2	. .	− 6.6	44 7 54.8	− 0.8
30	312 42	26.9	26.7	26.8	26.7	32	. .	225	. .	185	. .	80.3	47 13 19.5	. .	− 58.6	98 20 39.3	− 3.0
31	349 32	29.8	0.0	25.3	29.0	32	. .	. .	. .	600	580	80.3	10 23 27.8	90.0	+ 10.0	61 29 59.0	+ 0.6
32	320 40	10 4.0	6.7	0.0	4.7	35	. .	. .	. .	840	750	80.3	39 16 22.0	. .	+ 44.3	90 23 27.5	− 0.4
33	319 46	5.9	. .	2.5	. .	33	. .	560	. .	500	. .	80.3	40 9 48.1	. .	+ 45.7	91 16 55.0	− 3.7
34	328 26	9 28.2	0.5	29.2	1.2	34	. .	865	. .	825	. .	80.3	31 30 3.0	. .	+ 33.1	82 36 57.3	+ 1.1
35	342 48	18.7	16.8	12.7	0.5	33	865	815	. .	. .	. .	80.3	17 7 30.0	. .	+ 16.5	68 14 7.7	. .
36	342 16	21.8	19.5	19.4	10.7	31	. .	. .	. .	610	585	80.3	17 39 1.7	97.0	+ 17.0	68 45 39.9	. .
37	312 56	10 9.0	9.0	7.0	9.8	32	. .	. .	. .	010	990	80.3	46 59 28.6	. .	+ 57.0	98 6 46.8	− 0.6
38	333 38	8.6	7.2	4.6	7.3	35	. .	075	. .	045	. .	80.3	26 18 13.5	. .	+ 26.3	77 25 1.0	+ 0.8
39	334 26	8.1	8.1	5.3	8.5	34	. .	080	. .	155	. .	80.3	25 29 59.7	. .	+ 25.5	76 36 46.4	. .
40	334 26	8.1	8.1	5.3	8.5	32	995	. .	. .	. .	040	80.3	25 29 42.8	100.0	+ 25.3	76 36 29.3	. .
41	341 32	0.8	2.2	29.5	2.3	37	. .	020	. .	970	. .	80.3	18 24 37.4	. .	+ 17.7	69 31 16.3	+ 2.6
42	312 8	14.8	11.7	7.7	12.5	33	. .	. .	. .	050	030	79.7	47 47 46.9	. .	+ 1 0.1	98 55 8.2	− 0.1
43	350 52	8.6	7.1	4.8	7.8	35	. .	765	. .	685	. .	79.7	1 4 23.4	84.0	+ 1.0	52 10 45.6	+ 1.5
44	23 44	7.5	5.6	2.5	4.8	31	235	. .	. .	. .	165	79.7	336 11 12.0	. .	− 24.1	27 17 9.1	+ 6.5
45	339 8	10.0	7.8	3.6	8.8	37	. .	050	. .	000	. .	79.7	20 48 43.6	. .	+ 20.8	71 55 25.6	− 2.1
46	293 50	6.6	4.9	1.7	6.5	33	. .	. .	. .	065	045	79.7	66 5 40.2	. .	+ 2 2.6	117 14 4.0	−15.6
47	327 52	3.0	1.5	27.9	1.5	33	. .	575	. .	525	. .	79.7	32 3 43.7	. .	+ 34.2	83 10 39.1	− 0.4
48	325 54	7.4	4.9	1.1	5.0	32	. .	830	. .	790	. .	79.7	34 1 36.0	. .	+ 36.9	85 8 34.1	− 0.3
49	140 40	7.5	5.8	2.3	5.3	36	. .	. .	620	670	730	79.7	219 16 34.2	. .	+ 44.7	11 49 2.3	+ 0.4
50	5 12	8.5	5.4	2.1	4.5	35	. .	. .	. .	450	440	79.7	354 44 17.7	. .	− 5.1	45 50 33.8	+ 2.9

No.	Barom.	At. Ther.
	in.	°
5	29.96	82.5
6	29.94	89.8
7	29.93	93.0
9	29.91	93.2
35	30.20	77.0
36	30.33	79.0
39	30.25	76.0
40	30.20	83.5
	30.17	88.5
	30.13	90.0
	30.05	84.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
5	− 2.5	− 15 44.9	. .	− 15 47.4
6	− 2.4	+ 15 44.9	. .	+ 15 42.5
7	− 5.3	+ 4.6	. .	− 0.7
9	− 2.8	+ 6.6	. .	+ 3.8
35	− 2.6	+ 15 46.1	. .	+ 15 43.5
36	− 2.6	− 15 46.1	. .	− 15 48.7
39	− 3.1	− 8.7	+ 0.3	− 11.5
40	− 3.1	+ 8.7	. .	+ 5.6

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
July 15	1	B. A. C. 5432[1]. .	E.	. .	. .	. .	. .	. .	. .	14.3	16.3	19.3	10 4.49	— 0.84	. .	— 4.04	16 9 59.61	— 2.08
	2	B. A. C. 5432[2]. .	E.	. .	. .	59.6	2.1	4.5	6.8	9.5	. .	. .	10 4.50	— 0.84	. .	— 4.04	16 9 59.62	— 2.08
	3	τ Herculis (R.) . .	E.	49.4	51.3	57.2	0.1	3.2	6.3	9.0	15.0	17.4	16 3.21	+ 0.55	. .	— 4.04	16 15 59.72	+ 0.37
	4	B. A. C. 5541 . .	E.	27.4	30.5	32.3	39.2	41.7	44.0	51.2	53.0	56.0	28 41.70	— 0.82	. .	— 4.05	16 28 36.83	— 2.12
	5	XVI, 13 . . .	E.	14.9	18.0	19.6	26.7	29.1	31.5	38.5	40.4	43.5	31 29.13	— 0.67	. .	— 4.05	16 31 24.41	— 2.46
	6	XVI, 15 . . .	E.	0.7	3.6	5.3	11.8	13.9	16.3	22.8	24.5	27.2	36 14.01	— 0.69	. .	— 4.05	16 36 9.27	— 2.35
	7	XVI, 21 . . .	E.	28.2	31.0	32.8	39.5	41.7	44.0	50.8	52.4	55.3	40 41.74	— 0.68	. .	— 4.05	16 40 37.01	— 2.41
	8	B. A. C. 5693 . .	E.	4.0	7.0	8.7	16.0	18.5	20.9	28.1	30.0	33.0	48 18.47	— 0.82	. .	— 4.05	16 48 13.60	— 2.18
	9	B. A. C. 5714 . .	E.	14.0	17.0	18.6	25.5	27.7	30.0	36.8	38.5	41.3	52 27.71	— 0.79	. .	— 4.05	16 52 22.87	— 2.17
	10	XVI, 24 . . .	E.	18.0	21.2	23.3	31.0	33.6	36.0	43.8	45.7	48.9	54 33.50	— 0.67	. .	— 4.05	16 54 28.88	— 2.75
	11	B. A. C. 5753 . .	E.	. .	. .	. .	59.1	1.0	3.1	7.4	8.9	11.5	57 58.95	— 0.75	. .	— 4.05	16 57 54.15	— 2.18
	12	B. A. C. 5757 . .	E.	. .	. .	12.9	15.0	17.1	19.3	21.4	. .	. .	58 17.14	— 0.75	. .	— 4.05	16 58 12.34	— 2.18
	13	δ Ursæ Minoris. .	E.	. .	. .	11.5	48.5	22.0	57.0	31.5	. .	. .	13 22.10	— 5.24	. .	— 4.07	18 13 12.79	+ 0.41
	14	XVIII, 13 . . .	E.	21.5	23.4	28.6	31.2	33.7	36.3	38.8	43.8	45.8	25 33.68	— 0.67	. .	— 4.07	18 25 28.94	— 3.19
	15	XVIII, 14 . . .	E.	52.9	56.0	57.6	4.3	6.7	9.0	15.8	17.4	20.5	29 6.69	— 0.68	. .	— 4.08	18 29 1.93	— 2.90
	16	XVIII, 17 . . .	E.	46.1	49.0	50.8	57.4	59.5	1.9	8.8	10.6	13.5	33 59.73	— 0.68	. .	— 4.08	18 33 54.97	— 2.88
	17	51 Cephei, S. P. . .	E.	. .	. .	55.0	11.5	32.0	48.0	. .	. .	. .	40 30.48	+ 5.19	. .	— 4.08	6 40 31.59	+ 1.35
	18	XVIII, 24 . . .	E.	2.1	5.0	7.0	13.8	16.2	18.5	25.6	27.5	30.5	48 16.24	— 0.68	. .	— 4.08	18 48 11.48	— 3.04
	19	B. A. C. 6475 . .	E.	20.6	24.0	26.2	31.8	37.5	43.2	48.9	51.0	54.6	51 37.53	— 0.90	. .	— 4.08	18 51 32.55	— 2.43
	20	B. A. C. 6542 . .	E.	16.9	19.8	21.5	28.0	30.4	32.7	39.4	41.0	43.9	1 30.40	— 0.79	. .	— 4.09	19 1 25.52	— 2.35
	21	B. A. C. 6574 . .	E.	6.3	9.2	10.9	17.5	19.6	21.8	28.4	30.0	32.9	7 19.62	— 0.78	. .	— 4.09	19 7 14.75	— 2.36
	22	B. A. C. 6581 . .	E.	. .	. .	30.2	32.8	35.5	38.2	40.7	. .	. .	9 35.48	— 0.86	. .	— 4.09	19 9 30.53	— 2.35
	23	Anonymous . .	E.	54.1	57.3	59.0	4.4	6.9	9.1	11.5	14.0	. .	16 9.06	— 0.67	. .	— 4.09	19 16 4.30	. .
	24	δ Aquilæ. . . .	E.	3.7	6.3	7.8	13.9	15.9	18.0	24.1	25.7	28.2	19 15.96	— 0.72	— 4.06	— 4.09	19 19 11.15	0.00
	25	B. A. C. 6687 . .	E.	8.5	12.8	15.2	25.2	28.5	32.0	41.8	44.4	48.5	24 28.54	— 0.97	. .	— 4.09	19 24 23.48	— 2.52
	26	B. A. C. 6717 . .	E.	2.3	6.2	8.5	17.6	21.0	24.1	33.4	35.8	39.7	30 20.96	— 0.94	. .	— 4.09	19 30 15.93	— 2.46
	27	γ Aquilæ. . . .	E.	. .	. .	19.2	21.3	23.4	25.5	27.5	. .	. .	40 23.38	— 0.74	— 4.06	— 4.10	19 40 18.54	— 0.01
	28	α Aquilæ. . . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	29	β Aquilæ. . . .	E.	2.3	4.9	6.5	10.5	. .	. .	. .	. .	. .	49 14.65	— 0.74	— 4.03	— 4.10	19 49 9.81	— 0.04
	30	Anonymous . .	E.	. .	. .	. .	. .	55.6	57.7	1.8	3.5	5.9	56 53.46	— 0.70	. .	— 4.10	19 56 58.66	. .
	31	Anonymous . .	E.	. .	. .	. .	. .	. .	. .	33.6	35.6	37.9	57 24.39	— 0.70	. .	— 4.10	19 57 19.59	— 2.69
16	32	α Canis Majoris. .	S.	. .	. .	. .	. .	. .	44.9	49.0	50.7	53.2	39 40.53	— 0.58	— 4.77	— 4.72	6 39 35.23	— 0.03
17	33	Sun I	S.	59.8	2.5	4.0	10.8	13.0	15.3	21.2	23.3	26.2	46 12.90	— 0.67	. .	— 4 74	7 46 7.49	. .
	34	Sun II	S.	15.3	18.3	20.0	26.5	28.8	31.0	37.4	39.2	41.9	48 28.71	— 0.67	. .	— 4.74	7 48 23.30	. .
	35	α Leonis	S.	32.7	35.4	36.9	43.0	45.2	47.3	53.6	55.0	57.8	1 45.21	— 0.65	— 4.72	— 4.77	10 1 39.79	— 0.09
	36	Venus I . . .	S.	27.5	30.2	36.0	38.3	40.3	42.3	44.5	50.0	52.7	14 40.20	— 0.64	. .	— 4.77	10 14 34.79	+ 0.48
	37	δ Ophiuchi . . .	S.	39.8	42.4	43.9	50.0	52.1	54.1	0.4	1.8	4.4	7 52 10	— 0.57	— 4.86	— 4.92	16 7 46.61	— 0.04
	38	XVI, 4	S.	57.7	0.5	2.2	8.9	11.2	13.5	20.0	21.6	24.3	13 11.10	— 0.53	. .	— 4.93	16 13 5.64	— 2.23
	39	XVI, 6	S.	30.7	33.6	35.3	42.4	44.8	47.1	54.0	55.8	58.7	19 44.71	— 0.52	. .	— 4.93	16 19 39.26	— 2.26
	40	A Draconis . . .	S.	. .	. .	11.8	17.4	23.2	28.7	34.9	. .	. .	28 23.20	— 1.11	. .	— 4.93	16 28 17.16	— 0.27
	41	B. B. C. 5560 . .	S.	. .	. .	. .	. .	. .	. .	. .	7.3	12.6	30 47.30	— 0.92	. .	— 4.93	16 30 41.45	— 2.65
	42	B. A. C. 5658 . .	S.	. .	. .	17.5	21.1	24.7	28.3	32.0	. .	. .	44 24.72	— 0.84	. .	— 4.94	16 44 18.94	— 2.46
	43	κ Ophiuchi . . .	S.	37.6	40.2	41.8	47.9	50.0	52.0	58.2	59.8	2.4	51 49.99	— 0.60	— 4.95	— 4.94	16 51 44.45	— 0.05
	44	ε Ursæ Minoris . .	S.	39.6	58.4	9.7	55.0	10.9	25.3	11.1	22.0	42.0	59 10.44	— 2.24	. .	— 4.94	16 59 3.20	— 0.28
	45	a^1 Herculis . . .	S.	49.2	52.0	53.5	. .	. .	. .	10.3	12.0	14.6	9 1.93	— 0.61	— 4.95	— 4.95	17 8 56.37	+ 0.02
	46	a^2 Herculis . . .	S.	. .	. .	58.0	0.0	2.3	4.3	6.6	. .	. .	9 2.24	— 0.61	. .	— 4.95	17 8 56.68	. .
	47	B. A. C. 5863 . .	S.	50.0	53.0	54.9	2.1	4.5	7.1	14.3	16.0	19.0	16 4.54	— 0.67	. .	— 4.95	17 15 58.92	— 2.24
	48	XVII, 8 . . .	S.	38.4	41.2	43.0	49.6	51.8	54.0	0.9	2.6	5.4	23 51.88	— 0.53	. .	— 4.95	17 23 46.40	— 2.62
	49	α Ophiuchi . . .	S.	3.0	4.7	8.8	10.9	13.0	15.1	17.1	21.4	22.9	29 12.99	— 0.61	— 4.95	— 4.95	17 29 7.43	+ 0.03
	50	B. A. C. 5988 . .	S.	49.3	52.2	53.9	0.4	2.7	5.0	11.9	13.4	16.3	30 2.79	— 0.64	. .	— 4.96	17 35 57.19	— 2.20

4. Wire B used.
11, 31. Wire A used.
23. Observed for Julia.
27. Bisections at wires V and VI.
28. Telescope micrometer reading increased one revolution in reduction.
30, 31. Observed for Eurynome.
40, 42, 49. Bisections at sets B and D.
44. Bisections at set C.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	355 14	10 12.2	9.8	6.7	8.5	37	. .	. .	. .	420	400	79.7	4 42 51.8	. .	+ 4.5	55 49 17.5	+ 1.1
2	355 14	12.2	9.8	6.7	8.5	37	. .	. .	. .	160	130	79.7	4 42 47.8	. .	+ 4.5	55 49 13.5	+ 1.1
3	172 12	16.0	14.5	9.0	10.4	30	. .	570	. .	505	. .	79.7	187 43 9.2	. .	+ 7.4	43 23 4.6	− 0.5
4	351 50	7.0	5.0	0.4	3.7	30	. .	780	. .	710	. .	79.7	8 7 37.4	. .	+ 7.8	59 14 6.4	+ 0.2
5	290 52	9.3	5.4	1.9	5.3	35	. .	090	. .	065	. .	79.7	69 4 11.4	. .	+ 2 22.6	120 12 55.2	−14.0
6	298 34	11.6	9.0	4.5	9.1	33	. .	. .	. .	585	575	79.7	61 21 51.9	. .	+ 1 40.3	112 29 53.4	−12.0
7	296 46	10.0	6.8	2.3	6.6	34	. .	170	. .	090	. .	79.7	63 9 57.9	. .	+ 1 48.2	114 18 7.3	−12.2
8	352 58	11.9	9.1	7.2	9.9	37	. .	210	. .	165	. .	79.7	6 58 48.2	. .	+ 6.7	58 5 16.1	+ 0.1
9	346 36	11.3	7.3	2.3	5.2	36	. .	170	. .	125	. .	79.7	13 20 29.2	. .	+ 13.1	64 27 3.5	− 1.0
10	284 26	14.1	10.6	6.0	8.8	37	. .	. .	. .	765	750	79.7	75 30 57.0	. .	+ 3 29.5	126 40 47.7	−14.1
11	334 48	13.5	10.6	4.8	9.0	36	. .	. .	. .	625	585	79.7	25 6 6.0	. .	+ 25.8	76 12 53.0	− 3.2
12	334 48	13.5	10.6	4.8	9.0	34	. .	. .	. .	890	880	79.7	25 8 13.1	78.5	+ 25.9	76 15 0.2	− 3.2
13	47 38	11.4	8.3	4.8	7.5	34	975	. .	000	. .	955	79.7	312 18 12.7	. .	− 1 0.6	3 23 33.3	− 0.9
14	284 38	14.7	11.3	7.0	10.9	36	. .	. .	. .	050	015	79.7	75 18 31.7	. .	+ 3 27.1	120 28 20.0	− 7.1
15	294 42	6.5	2.6	0.2	4.2	38	. .	600	. .	480	. .	79.7	65 15 2.4	. .	+ 1 59.2	116 23 22.8	− 5.8
16	295 58	12.8	9.4	5.7	8.8	34	. .	185	. .	175	. .	79.7	63 58 1.4	. .	+ 1 52.6	115 6 15.2	− 5.2
17	53 46	9.2	6.3	3.8	5.3	30	. .	590	. .	630	. .	79.7	306 9 3.8	. .	− 1 15.5	357 14 9.5	− 0.6
18	291 26	8.4	5.4	0.5	4.5	32	. .	480	. .	420	. .	79.7	68 29 30.4	. .	+ 2 19.2	119 38 10.8	− 4.5
19	4 50	5.8	4.0	1.2	2.3	37	. .	865	. .	795	. .	79.7	355 6 51.9	. .	− 4.7	46 13 8.4	− 1.1
20	345 6	9.7	7.7	3.0	5.3	34	135	120	. .	. .	. .	79.7	14 49 57.9	. .	+ 14.7	65 56 33.8	− 1.3
21	342 24	6.3	4.9	29.3	3.5	37	. .	325	. .	235	. .	79.7	17 32 43.5	. .	+ 17.5	68 39 22.2	− 1.3
22	359 58	13.8	11.5	7.5	8.5	33	. .	. .	. .	510	495	79.7	359 57 52.7	. .	0.0	51 4 13.9	− 1.4
23	287 30	13.2	10.3	6.3	10.2	30	. .	280	. .	075	. .	79.7	72 25 0.9	. .	+ 2 52.5	123 34 14.6	. .
24	323 56	11.0	8.0	3.5	7.7	38	. .	. .	. .	275	250	79.7	36 1 2.8	. .	+ 40.2	87 8 4.2	− 0.8
25	13 6	11.5	8.4	4.0	5.9	34	. .	260	. .	175	. .	79.7	346 50 0.8	. .	− 13.0	37 56 9.0	− 2.0
26	10 2	3.1	2.9	28.0	0.3	36	. .	. .	. .	530	475	79.7	349 54 30.0	. .	− 9.9	41 0 41.3	− 2.0
27	331 22	2.0	0.5	26.5	0.8	37	. .	. .	. .	250	215	79.7	28 34 39.3	76.0	+ 30.2	79 41 30.7	− 1.3
28	329 36	2.1	0.5	26.6	0.0	37	. .	. .	. .	160	140	79.7	30 20 53.4	. .	+ 32.4	81 27 47.0	+ 1.1
29	327 8	17.6	15.3	11.1	15.0	31	. .	480	. .	430	. .	79.7	32 47 25.4	. .	+ 35.7	83 54 22.3	− 0.3
30	308 12	6.8	4.8	29.3	3.4	31	. .	. .	. .	370	330	79.7	51 43 13.1	. .	+ 1 10 1	102 50 41.4	. .
31	308 12	6.8	4.8	29.3	3.4	36	. .	. .	. .	970	020	79.7	51 42 6.4	. .	+ 1 10.0	102 49 37.6	+ 1.0
32	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
33	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
34	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
35	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
36	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
37	317 42	16.7	14.6	8.2	13.1	37	. .	714	. .	660	. .	79.8	42 14 59.3	. .	+ 50.7	93 22 11.2	− 0.6
38	297 12	16.7	13.0	7.5	12.0	33	. .	295	. .	237	. .	79.8	62 43 50.6	72.4	+ 1 48.0	113 51 59.8	−13.2
39	292 4	14.6	10.9	5.2	10.7	32	. .	724	. .	774	. .	79.8	67 51 40.7	. .	+ 2 16.5	119 0 18.4	−14.0
40	30 4	16.4	12.8	8.7	11.6	32	. .	517	. .	535	. .	79.8	329 51 39.6	. .	− 32.5	20 57 28.3	− 0.3
41	22 8	11.3	9.5	4.5	7.2	36	. .	. .	. .	710	660	79.8	337 48 40.2	71.0	− 22.9	28 54 38.5	+ 4.4
42	16 40	8.7	7.4	3.6	5.1	33	. .	630	. .	560	. .	79.8	343 15 49.7	. .	− 16.9	34 21 54.0	+ 3.6
43	330 38	5.1	3.0	28.6	4.2	37	. .	700	. .	616	. .	79.8	29 18 48.4	. .	+ 31.5	80 25 41.1	+ 0.1
44	43 16	20.0	15.2	11.6	15.6	33	635	660	630	690	650	79.8	316 40 0.0	. .	− 52.9	7 45 28.3	+ 0.1
45	335 34	9.8	8.0	2.3	7.5	30	730	. .	. .	. .	690	79.8	24 21 6.4	70.3	+ 25.4	75 27 53.0	− 0.4
46	335 34	9.8	8.0	2.3	7.5	30	. .	855	. .	915	. .	79.8	24 21 9.0	. .	+ 25.4	75 27 55.6	. .
47	353 40	5.9	3.3	29.7	3.3	33	. .	123	. .	053	. .	79.8	6 15 39.0	. .	+ 6.2	57 22 6.4	+ 0.3
48	297 12	12.8	9.4	4.9	9.7	33	. .	042	. .	070	. .	79.8	62 43 44.3	70.0	+ 1 48.5	113 51 54.0	− 9.8
49	333 42	11.2	8.9	3.1	8.5	34	130	. .	. .	. .	130	79.8	26 13 59.6	. .	+ 27.7	77 29 48.5	− 1.0
50	345 38	9.0	5.8	0.1	4.6	37	. .	363	. .	273	. .	79.8	14 18 45.5	. .	+ 14.4	65 25 21.1	− 1.0

No.	Barom.	At. Ther.
	in.	°
12	30.04	80.5
27	30.02	78.0
33	30.12	77.0
39	30.11	76.0
42	30.11	74.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
July 17	1	B. A. C. 6021 . .	S.	25.5	28.6	30.2	37.2	39.5	11.9	48.8	50.3	53.4	41 39.49	− 0.65	. .	− 4.96	17 41 33.88	− 2.28
	2	B. A. C. 6056 . .	S.	35.2	39.0	41.3	50.9	53.7	56.9	6.0	8.5	12.2	46 53.74	− 0.77	. .	− 4.96	17 46 48.01	− 2.44
	3	δ Ursæ Minoris . .	S.	. .	. .	. .	45.6	19.8	56.0	30.4	. .	. .	13 20.62	− 4.54	. .	− 4.97	18 13 11.11	− 0.88
	4	51 Cephei, S. P. .	S.	. .	. .	55.7	13.7	29.1	48.9	6.0	. .	. .	40 30.68	+ 4.56	. .	− 4.98	6 40 30.26	− 0.40
	5	δ Aquilæ . . .	S.	7.1	8.5	12.7	14.8	16.9	18.9	20.9	25.0	26.6	19 16.82	− 0.58	− 5.02	− 4.99	19 19 11.25	+ 0.08
	6	B. A. C. 6714 . .	S.	44.6	47.5	49.3	56.3	58.7	1.0	8.0	9.6	12.6	29 58.62	− 0.66	. .	− 5.00	19 29 52.96	− 2.35
	7	γ Aquilæ . . .	S.	11.9	14.4	15.9	22.2	24.2	26.3	32.4	34.0	36.7	40 24.22	− 0.60	− 5.02	− 5.00	19 40 18.62	+ 0.05
	8	α Aquilæ . . .	S.	33.9	36.5	37.9	44.1	46.2	48.3	54.5	56.1	58.6	44 46.23	− 0.59	− 5.04	− 5.00	19 44 40.64	+ 0.08
18	9	48 Cephei, S. P. .	E.	24.6	12.9	6.2	48.0	38.0	28.9	. .	52.0	45.0	4 29.03	+ 0.62	. .	− 5.52	3 4 24.13	+ 0.46
	10	μ^1 Bootis . . .	E.	36.6	39.7	41.6	49.5	52.1	54.7	2.4	4.4	7.6	19 52.07	− 0.79	− 5.52	− 5.53	15 19 45.75	− 0.02
	11	B. A. C. 5157 . .	E.	42.3	45.7	47.9	56.4	59.2	1.9	10.5	12.6	15.9	30 59.16	− 0.82	. .	− 5.53	15 30 52.81	− 1.97
	12	XV, 18 . . .	E.	38.3	41.6	43.6	51.5	54.3	56.9	4.7	6.7	10.0	32 54.18	− 0.63	. .	− 5.53	15 32 48.02	− 2.14
	13	α Serpentis . . .	E.	59.6	2.0	3.7	9.8	11.8	13.8	20.1	21.7	24.3	38 11.87	− 0.69	− 5.55	− 5.53	15 38 5.65	+ 0.04
	14	ε Serpentis . . .	E.	27.9	30.5	32.0	38.3	40.4	42.4	48.5	50.0	52.6	44 40.29	− 0.68	− 5.52	− 5.53	15 41 34.08	− 0.01
	15	ζ Ursæ Minoris . .	E.	47.6	0.0	7.8	37.9	47.9	57.9	27.5	34.5	46.8	48 47.54	− 1.74	. .	− 5.53	15 48 40.27	+ 0.10
19	16	β Corvi . . .	E.	40.4	43.0	44.7	51.4	53.5	55.7	2.5	4.0	6.9	27 53.57	− 0.79	− 5.95	− 5.94	12 27 46.84	− 0.03
	17	Moon I, N. . .	E.	9.0	11.5	13.1	19.4	21.5	23.6	29.8	31.4	34.0	35 21.48	− 0.79	. .	− 5.94	12 35 14.75	+61.14
	18	12 Canum Venat. .	E.	0.0	3.4	5.3	13.3	15.9	18.5	26.4	28.4	31.6	50 15.87	− 0.89	− 5.99	− 5.95	12 50 9.03	+ 0.04
	19	Polaris, S. P. .	E.	. .	. .	21.5	56.0	31.5	6.0	40.5	. .	. .	12 31.10	+ 8.63	. .	− 5.96	1 12 33.77	− 0.27
	20	α Virginis . . .	E.	28.8	31.4	32.9	39.1	41.2	13.3	49.5	51.0	53.6	18 41.20	− 0.78	− 5.97	− 5.96	13 18 34.46	− 0.01
	21	ζ Virginis . . .	E.	12.0	14.6	16.0	22.3	24.3	26.4	32.5	34.0	36.5	28 24.29	− 0.80	− 5.92	− 5.97	13 28 17.52	− 0.05
	22	η Bootis . . .	E.	36.3	38.9	40.6	47.0	49.2	51.4	57.9	59.4	2.1	48 49.20	− 0.82	− 5.94	− 5.97	13 48 42.31	− 0.18
	23	α Coronæ Borealis .	E.	16.0	18.9	20.7	27.6	30.0	32.3	39.0	40.8	43.5	29 29.87	− 0.84	− 5.97	− 6.01	15 29 23.02	− 0.04
	24	XV, 21 . . .	E.	18.7	21.5	23.2	29.8	32.0	34.1	40.7	42.4	45.0	33 31.93	− 0.78	. .	− 6.01	15 33 25.14	− 1.94
	25	α Serpentis . . .	E.	0.1	2.7	4.2	10.4	12.5	14.5	20.7	22.2	24.8	38 12.46	− 0.80	− 6.04	− 6.01	15 38 5.65	+ 0.05
	26	ε Serpentis . . .	E.	28.5	31.2	32.8	38.8	40.9	43.0	49.0	50.7	53.3	44 40.91	− 0.80	− 6.03	− 6.01	15 44 34.10	+ 0.02
	27	ζ Ursæ Minoris . .	E.	48.2	0.9	8.5	37.7	48.4	57.9	28.0	35.3	48.5	48 48.16	− 1.71	. .	− 6.02	15 48 40.43	+ 0.36
22	28	β Orionis . . .	E.	25.4	28.0	29.6	35.7	37.9	39.9	46.2	47.6	50.3	8 37.84	− 0.70	− 7.99	− 8.08	5 8 29.06	− 0.09
	29	β Tauri . . .	E.	14.8	17.6	19.4	26.4	28.6	31.0	37.9	39.6	42.5	18 28.64	− 0.77	− 7.93	− 8.08	5 18 19.79	− 0.17
	30	δ Orionis . . .	E.	30.7	33.3	34.8	41.0	43.0	45.0	51.3	52.8	55.4	25 43.03	− 0.71	− 7.95	− 8.08	5 25 34.24	− 0.16
	31	ε Orionis . . .	E.	46.0	48.4	50.0	56.0	58.0	0.2	6.3	7.8	10.3	29 58.11	− 0.71	− 8.04	− 8.09	5 29 49.31	− 0.06
	32	α Orionis . . .	E.	17.6	20.2	21.8	27.9	29.9	32.0	38.2	39.8	42.2	48 29.96	− 0.72	− 8.05	− 8.09	5 48 21.15	− 0.07
	33	μ Geminorum . .	E.	15.8	18.7	20.3	27.0	29.1	31.4	38.0	39.7	42.5	15 29.17	− 0.75	− 7.99	− 8.11	6 15 20.31	− 0.16
	34	γ Geminorum . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	35	α Canis Majoris .	E.	31.4	34.1	35.8	42.0	44.2	46.3	52.8	54.4	57.0	39 44.22	− 0.70	− 8.24	− 8.12	6 39 35.40	+ 0.04
23	36	Sun I, N. . . .	E.	4.0	6.7	8.4	14.7	16.9	19.2	25.8	27.6	30.2	10 17.06	− 0.75	. .	− 8.12	8 10 8.19	. .
	37	Sun II, S. . . .	E.	. .	. .	27.3	29.4	31.8	33.9	36.0	. .	. .	12 31.68	− 0.75	. .	− 8.12	8 12 22.81	. .
	38	α Leonis	E.	36.3	38.8	40.5	46.7	48.8	50.9	57.3	58.8	1.4	1 48.83	− 0.73	− 8.26	− 8.20	10 1 39.90	+ 0.02
	39	γ^1 Leonis	E.	. .	. .	6.3	8.4	10.6	12.8	15.0	. .	. .	13 10.62	− 0.75	− 8.15	− 8.21	10 13 1.66	− 0.08
	40	Venus I, N. . .	E.	58.2	0.8	2.3	8.5	10.6	12.7	18.9	20.4	23.0	41 10.60	− 0.73	. .	− 8.22	10 41 1.65	+ 0.50
	41	Venus S. . . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	42	α Ursæ Majoris . .	E.	39.2	44.8	48.0	1.3	5.7	10.2	23.4	26.6	32.3	56 5.72	− 1.02	. .	− 8.23	10 55 56.47	− 0.04
	43	δ Leonis	E.	20.7	23.4	25.0	31.6	33.8	36.0	42.6	44.2	46.9	7 33.80	− 0.75	− 8.21	− 8.23	11 7 24.82	− 0.08
	44	δ Crateris . . .	E.	59.1	1.7	3.3	9.5	11.7	13.8	20.1	21.7	24.4	13 11.70	− 0.70	− 8.26	− 8.23	11 13 2.77	+ 0.01
	45	μ^1 Bootis	E.	39.2	42.5	44.4	52.2	54.8	57.3	5.1	7.0	10.2	19 54.74	− 0.77	− 8.30	− 8.34	15 19 45.63	− 0.05
	46	α Coronæ Borealis .	E.	18.3	21.2	22.9	29.8	32.0	34.5	41.2	43.0	45.8	29 32.08	− 0.73	− 8.34	− 8.34	15 29 23.01	0.00
	47	Moon I, N. . .	E.	58.2	1.0	2.6	9.4	11.7	14.0	20.9	22.5	25.4	40 11.74	− 0.67	. .	− 8.35	15 40 2.72	+67.28
	48	δ Scorpii	E.	51.0	53.9	55.6	2.0	4.4	6.5	13.2	14.7	17.6	53 4.32	− 0.67	− 8.46	− 8.35	15 52 55.30	+ 0.12
	49	β^1 Scorpii	E.	4.9	7.7	9.3	15.8	17.9	20.0	26.6	28.3	31.0	58 17.94	− 0.67	− 8.45	− 8.35	15 58 8.92	+ 0.13
	50	δ Ophiuchi . . .	E.	43.4	46.0	47.5	53.6	55.8	57.8	3.9	5.5	8.0	7 55.72	− 0.68	− 8.41	− 8.36	16 7 46.68	+ 0.07

9. Bisections at sets B and D.
12. Wire B used.
47. Bisections at wires II–VI.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	348 50	10 7.6	4.7	28.6	3.7	33	. .	230	. .	190	. .	69.8	11 5 41.4	. .	+ 11.0	62 12 13.6	− 0.6
2	9 28	7.7	6.2	1.0	4.1	34	. .	410	. .	330	. .	69.8	350 28 0.4	69.2	− 9.5	41 34 12.1	+ 1.2
3	47 38	7.0	5.8	0.3	3.3	35	. .	200	. .	186	. .	69.8	312 18 12.1	. .	− 1 1.9	3 23 31.4	− 2.3
4	53 46	18.0	15.0	12.0	14.6	30	116	. .	. .	. .	180	69.8	306 9 5.4	. .	− 1 17.1	357 14 9.5	− 0.2
5	323 56	19.4	17.0	11.5	15.2	37	. .	560	. .	678	. .	69.8	36 1 0.9	66.7	+ 41.1	87 8 3.2	− 1.5
6	350 14	16.0	14.7	8.9	12.6	34	. .	765	. .	707	. .	69.8	9 42 14.2	. .	+ 9.7	60 48 45.1	− 0.7
7	331 22	10.6	9.0	2.9	7.4	36	. .	700	. .	650	. .	69.8	28 34 38.2	. .	+ 30.8	79 41 30.2	− 1.4
8	329 36	14.2	13.5	7.9	12.1	37	. .	080	. .	074	. .	69.8	30 20 48.8	66.4	+ 33.1	81 27 43.1	− 2.5
9	63 44	3.8	2.8	29.4	1.7	32	560	. .	. .	. .	470	80.3	296 11 29.1	79.0	− 1 52.2	347 15 58.1	+ 0.4
10	358 52	4.1	2.4	29.0	1.9	35	. .	970	. .	940	. .	80.3	1 4 22.3	. .	+ 1.0	52 10 44.5	+ 0.8
11	4 38	10.0	9.0	5.7	7.8	36	040	000	. .	. .	. .	80.3	355 18 29.4	. .	− 4.6	46 24 46.0	+ 4.0
12	281 34	15.0	11.0	9.0	12.0	31	. .	170	. .	160	. .	80.3	78 23 58.7	. .	+ 4 24.7	129 34 37.6	−19.1
13	327 52	13.0	10.0	3.8	7.6	32	. .	. .	. .	955	935	80.3	32 3 43.1	. .	+ 35.0	83 10 39.3	0.0
14	325 54	4.6	1.0	28.0	2.0	32	. .	955	. .	905	. .	80.3	34 1 35.3	. .	+ 37.8	85 8 34.3	+ 0.1
15	39 12	6.2	2.7	0.8	1.5	32	100	. .	. .	. .	085	80.3	320 43 25.2	76.0	− 45.8	11 49 0.6	− 0.9
16	298 22	9 29.2	2,0	28.0	1.1	35	. .	195	. .	185	. .	78.9	61 34 7.0	94.0	+ 1 39.3	112 42 7.5	− 2.4
17	318 54	10 6.1	7.8	4.7	9.0	34	700	790	950	155	295	78.9	41 2 10.7	. .	+ 47.0	92 9 18.9	. .
18	0 2	4.9	7.7	3.8	5.2	32	. .	720	. .	680	. .	78.9	359 53 34.6	. .	− 0.1	50 59 55.7	− 0.5
19	52 22	2.5	29.5	25.7	29.9	30	430	. .	415	. .	465	78.9	307 32 53.4	. .	− 1 10.3	358 38 4.3	− 0.5
20	310 34	3.6	3.2	29.0	3.3	38	. .	165	. .	115	. .	78.9	49 22 54.7	. .	+ 1 3.0	100 30 18.9	− 0.8
21	321 6	5.0	4.2	1.0	5.0	34	. .	730	. .	720	. .	78.9	38 50 3 7	92.0	+ 43.6	89 57 8.5	− 0.1
22	340 4	9.8	8.9	5.4	7.9	32	. .	235	. .	230	. .	78.9	19 51 29.9	. .	+ 19.6	70 58 10.7	− 0.1
23	348 12	5.0	2.4	28.2	1.4	38	. .	690	. .	645	. .	78.9	11 45 2.2	80.0	+ 11.5	62 51 34.9	+ 0.6
24	299 52	2.5	29.5	25.8	1.5	34	. .	520	. .	515	. .	78.9	60 3 56.5	. .	+ 1 35.9	111 11 53.6	−13.7
25	327 52	7.2	4.6	0.0	4.0	33	. .	285	. .	225	. .	78.9	32 3 41.4	. .	+ 34.7	83 10 37.3	− 1.9
26	325 54	12.2	8.7	3.3	6.7	32	. .	565	. .	475	. .	78.9	34 1 33.9	. .	+ 37.5	85 8 32.6	− 1.5
27	39 12	6.4	2.5	28.8	1.2	32	. .	240	. .	160	. .	78.9	320 43 25.1	78.5	− 45.4	11 49 0.9	− 0.5
28	312 42	9 25.4	26.0	21.3	25.2	32	. .	325	. .	315	. .	73.7	47 13 17.3	78.0	+ 59.8	98 20 38.3	− 2.5
29	349 32	10 3.8	3.6	29.0	2.2	32	. .	320	. .	230	. .	73.7	10 23 24.5	. .	+ 10.1	61 29 55.8	− 2.4
30	320 40	3.8	5.0	0.1	4.9	35	. .	740	. .	685	. .	78.7	39 16 18.3	. .	+ 45.2	90 23 24.7	− 2.0
31	319 46	5.3	6.3	1.5	5.4	33	. .	165	. .	125	. .	78.7	40 9 40.1	. .	+ 46.5	91 16 47.8	− 2.3
32	326 26	3.0	2.4	28.7	2.2	34	. .	545	. .	490	. .	78.7	31 29 58.1	. .	+ 33.7	82 36 53.0	− 2.4
33	343 38	7.7	7.5	3.0	5.5	36	. .	830	. .	795	. .	78.7	16 18 37.7	. .	+ 16.0	67 25 14.9	− 3.3
34	337 34	5.4	5.2	0.0	3.2	37	. .	840	. .	. .	. .	78.7	22 22 50.6	. .	+ 22.5	73 29 34.3	+ 0.5
35	304 30	12.7	12.1	7.1	9.3	29	. .	440	. .	400	. .	78.7	55 24 48.7	87.0	+ 1 18.9	106 32 28.8	− 2.8
36	341 20	2.0	0.7	24.8	0.0	32	471	421	. .	. .	. .	78.7	18 35 24.3	. .	+ 18.3	69 42 3.8	. .
37	340 48	7.2	6.6	0.8	5.0	30	. .	. .	. .	275	205	78.7	19 6 56.2	87.0	+ 18.9	70 13 36.3	. .
39	333 38	6.2	6.0	2.0	5.0	34	. .	990	. .	955	. .	78.7	26 18 8.4	. .	+ 26.9	77 24 56.5	− 3.7
39	341 32	9 29.6	0.3	25.5	29.2	37	. .	100	. .	060	. .	78.7	18 24 34.5	. .	+ 18.1	69 31 13.8	− 0.1
40	330 48	10 8.2	7.7	4.2	6.5	36	680	. .	. .	. .	750	78.7	29 8 36.9	. .	+ 30.3	80 15 28.4	. .
41	330 48	8.2	7.7	4.2	6.5	37	. .	670	. .	680	. .	78.7	29 8 51.6	. .	+ 30.3	80 15 43.1	. .
42	23 28	10.3	9.8	8.1	7.8	34	. .	095	. .	085	. .	78.7	336 27 59.6	. .	− 23.6	27 33 57.2	− 4.0
43	342 16	8.6	7.2	4.8	8.0	36	. .	015	. .	000	. .	78.7	17 40 26.6	89.0	+ 17.3	68 47 5.1	− 1.7
44	306 58	7.9	9.0	4.2	7.5	35	. .	530	. .	430	. .	78.7	52 58 18.3	. .	+ 1 11.8	104 5 51.3	− 3.0
45	358 52	7.8	5.9	1.2	4.0	35	. .	760	. .	720	. .	80.4	1 4 22.0	. .	+ 1.0	52 10 44.2	+ 1.0
46	348 12	10.2	6.4	1.3	4.3	38	. .	290	. .	260	. .	80.4	11 45 1.5	75.5	+ 11.6	62 51 34.3	+ 0.4
47	298 34	6.6	3.5	28.9	3.5	37	175	280	445	595	700	80.4	61 22 46.1	. .	+ 1 41.5	112 30 48.8	. .
48	298 48	15.0	11.1	5.5	9.7	33	. .	270	. .	235	. .	80.4	61 7 49.1	. .	+ 1 40.5	112 15 50.8	− 0.8
49	301 36	11.3	7.1	2.8	7.5	33	. .	665	. .	615	. .	80.4	58 19 52.9	. .	+ 1 29.9	109 27 44.0	+ 0.7
50	317 42	9.8	6.8	1.1	5.3	38	. .	175	. .	110	. .	80.4	42 14 59.5	. .	+ 50.5	93 22 11.2	− 0.3

No.	Barom.	At. Ther.
	in.	°
8	30.13	69.0
9	30.24	80.0
15	30.36	78.0
16	30.26	85.0
21	30.26	84.0
25	30.27	81.0
27	30.27	80.0
28	30.15	73.5
35	30.16	78.0
37	30.17	79.5
43	30.14	87.0
46	30.09	76.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
17	−35 20.4	+ 14 49.9	. .	− 20 39.5
36	− 2.8	+ 15 46.2	. .	+ 15 43.4
37	− 2.9	− 15 46.2	. .	− 15 49.1
40	− 3.7	+ 7.4	. .	+ 3.7
41	− 3.7	− 7.4	+ 0.1	− 11.0
47	−48 15.8	+ 14 3.3	. .	− 33 12.5

DATE.	Number.		OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.														m. s.	s.	s.	s.	h. m. s.	s.
July 23	1		XVI, 3	E.	26.7	29.7	31.4	38.2	40.7	43.6	49.9	51.6	54.5	10 40.63	− 0.67	. .	− 8.36	16 10 31.60	− 2.22
	2		B. A. C. 5479	E.	. .	. .	43.0	45.6	48.0	50.5	53.0	. .	. .	17 48.02	− 0.75	. .	− 8.36	16 17 38.91	− 2.00
	3		XVI, 7	E.	44.2	47.1	48.8	55.3	57.6	59.8	6.4	8.0	10.8	19 57.56	− 0.67	. .	− 8.36	16 19 48.53	− 2.21
	4		B. A. C. 5568	E.	. .	. .	36.2	39.2	42.2	45.3	48.3	. .	. .	32 42.24	− 0.81	. .	− 8.37	16 32 33.00	− 2.15
	5		B. A. C. 5596	E.	. .	. .	24.9	28.0	31.1	34.3	37.5	. .	. .	35 31.16	− 0.83	. .	− 8.37	16 35 21.96	− 2.23
	6		B. A. C. 5620	E.	38.7	41.4	42.9	49.2	51.4	53.6	59.9	1.5	4.3	39 51.43	− 0.71	. .	− 8.37	16 39 42.35	− 2.06
	7		B. A. C. 5717	E.	. .	. .	22.6	26.9	31.0	35.0	39.4	. .	. .	52 30.98	− 0.93	. .	− 8.38	16 52 21.67	− 2.48
	8		B. A. C. 5740	E.	. .	. .	22.6	27.5	32.4	37.3	42.2	. .	. .	55 32.40	− 1.01	. .	− 8.38	16 55 23.01	− 2.68
	9		B. A. C. 5745	E.	. .	. .	50.7	55.4	0.4	5.0	10.0	. .	. .	56 0.30	− 1.01	. .	− 8.38	16 55 50.91	− 2.67
	10		B. A. C. 5798	E.	48.0	50.8	52.6	59.2	1.5	3.6	10.5	12.0	14.9	6 1.46	− 0.73	. .	− 8.38	17 5 52.35	− 2.14
	11		Anonymous	E.	. .	. .	11.0	13.1	15.3	17.6	19.9	. .	. .	6 15.38	− 0.73	. .	− 8.38	17 6 6.27	− 2.15
	12		XVII, 1	E.	14.5	17.6	19.5	26.6	29.0	31.6	38.4	40.4	43.6	13 29.02	− 0.67	. .	− 8.39	17 13 19.96	− 2.70
	13		XVII, 4	E.	37.6	40.9	42.9	50.2	52.9	55.1	2.6	4.5	7.6	16 52.70	− 0.67	. .	− 8.39	17 16 43.64	− 2.80
	14		B. A. C. 6147	E.	. .	. .	. .	. .	. .	. .	35.5	37.3	40.3	2 26.09	− 0.74	. .	− 8.41	18 2 16.94	− 2.29
	15	δ	Ursæ Minoris	E.	54.0	. .	12.0	. .	. .	. .	. .	. .	. .	13 21.10	− 3.84	. .	− 8.41	18 13 8.85	+ 0.13
	16	ι	Aquilæ	E.	20.4	23.0	24.6	30.8	32.6	35.0	41.0	42.6	45.3	28 32.84	− 0.68	− 8.54	− 8.42	18 28 23.74	+ 0.19
	17	α	Lyræ	E.	36.1	39.5	41.5	49.4	52.0	54.6	2.5	4.4	7.6	32 51.96	− 0.77	− 8.47	− 8.42	18 32 42.77	+ 0.07
	18	51	Cephei, S. P.	E.	. .	. .	0.0	16.0	34.5	54.5	12.0	. .	. .	40 35.40	+ 3.43	. .	− 8.43	6 40 30.40	− 0.63
	19	β	Lyræ	E.	22.7	25.8	27.7	35.0	37.4	39.8	47.0	48.0	52.0	45 37.37	− 0.75	− 8.56	− 8.43	18 45 28.19	+ 0.16
24	20	ε	Orionis	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	21	α	Orionis	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
29	22	α	Orionis	E.	22.3	25.1	26.0	32.7	34.9	37.0	43.0	44.6	47.1	48 34.81	− 0.79	−12.65	−12.74	5 48 21.28	− 0.12
	23	δ	Ursæ Minoris, S. P.	E.	. .	. .	. .	57.0	22.0	48.5	. .	. .	. .	13 22.57	+ 1.66	. .	−12.74	18 13 11.49	+ 2.59
	24	μ	Geminorum	E.	20.7	23.5	25.2	31.7	34.0	36.1	42.8	44.6	47.3	15 33.99	− 0.81	−12.58	−12.74	6 15 20.44	− 0.20
	25	ν	Geminorum	E.	26.8	29.5	31.3	37.5	39.6	41.8	48.2	49.8	52.5	30 39.67	− 0.80	−12.63	−12.75	6 30 26.12	− 0.15
	26	α	Canis Majoris	E.	36.3	39.0	40.6	47.0	48.9	51.1	57.7	59.2	1.9	39 49.08	− 0.80	−12.87	−12.75	6 39 35.53	+ 0.04
	27	ε	Canis Majoris	E.	39.8	42.8	44.4	51.5	53.8	56.0	3.0	4.7	7.5	53 53.72	− 0.81	−12.90	−12.76	6 53 40.15	+ 0.09
	28	δ	Canis Majoris	E.	15.3	18.4	20.2	27.0	29.3	31.5	38.4	40.2	42.7	3 29.22	− 0.80	−12.73	−12.76	7 3 15.66	− 0.08
	29	δ	Geminorum	E.	. .	. .	45.4	47.5	49.7	51.9	54.0	. .	. .	12 49.70	− 0.81	−12.87	−12.77	7 12 36.12	+ 0.04
	30	a^2	Geminorum	E.	. .	. .	. .	47.2	49.5	52.0	56.8	58.6	1.8	26 47.18	− 0.82	−12.68	−12.78	7 26 33.58	+ 0.14
	31	α	Canis Minoris	E.	43.5	46.2	47.7	53.8	55.9	58.0	4.0	5.6	8.1	32 55.87	− 0.79	−12.76	−12.78	7 32 42.30	− 0.18
	32	β	Geminorum	E.	36.0	38.9	40.7	47.6	49.9	52.3	59.3	0.9	3.8	37 49.93	− 0.82	−12.70	−12.78	7 37 36.33	− 0.11
30	33		Sun I, N.	E.	42.4	45.1	46.9	53.1	55.3	57.6	3.9	5.5	8.2	37 55.33	− 0.80	. .	−12.81	8 37 41.72	. .
	34		Sun II, S.	E.	. .	. .	. .	8.8	10.9	13.1	17.4	19.0	21.8	40 8.70	− 0.80	. .	−12.81	8 39 55.00	. .
	35	ε	Leonis	E.	. .	. .	. .	55.8	57.9	0.1	4.6	6.3	9.1	38 55.67	− 0.81	−12.82	−12.84	9 38 42.02	− 0.08
	36	α	Leonis	E.	40.8	43.5	45.3	51.4	53.6	55.6	1.8	3.3	6.0	1 53.48	− 0.80	−12.83	−12.84	10 1 39.84	− 0.05
	37	γ^1	Leonis	E.	2.3	5.0	6.8	13.2	15.4	17.5	24.1	25.7	28.5	13 15.39	− 0.80	−12.86	−12.85	10 13 1.74	− 0.01
	38	δ	Leonis	E.	25.0	28.0	29.6	36.2	38.4	40.6	47.3	48.9	51.7	7 38.41	− 0.81	−12.78	−12.87	11 7 24.73	− 0.15
	39		Venus I, N.	E.	4.9	7.6	8.8	15.2	17.3	19.4	25.6	27.0	29.8	11 17.29	− 0.79	. .	−12.87	11 11 3.63	+ 0.51
	40	β	Leonis	E.	39.4	42.0	43.7	50.0	52.0	54.1	0.5	2.0	4.8	42 52.06	− 0.80	−12.80	−12.88	11 42 38.38	− 0.10
	41	β^1	Scorpii	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	42	δ	Ophiuchi	E.	48.0	50.5	52.0	58.2	0.2	2.3	8.5	10.0	12.6	8 0.26	− 0.74	−12.96	−13.00	16 7 46.52	− 0.02
	43	τ	Herculis	E.	55.3	59.0	1.4	10.0	13.0	16.3	25.0	27.4	31.2	16 13.18	− 0.76	. .	−13.00	16 15 59.42	+ 0.37
	44		B. A. C. 5497	E.	. .	. .	3.6	6.5	9.5	12.3	15.3	. .	. .	21 9.44	− 0.75	. .	−13.01	16 20 55.68	− 1.95
	45	α	Scorpii	E.	46.2	48.0	52.4	54.6	57.0	59.2	1.5	6.0	7.9	21 56.98	− 0.76	−12.93	−13.01	16 21 43.21	− 0.11
	46		B. A. C. 5560	E.	. .	. .	46.9	51.2	55.4	59.7	3.9	. .	. .	30 55.42	− 0.81	. .	−13.01	16 30 41.60	− 2.18
	47		B. A. C. 5568	E.	. .	. .	40.8	43.7	46.8	49.9	52.8	. .	. .	32 46.80	− 0.76	. .	−13.01	16 32 33.03	− 2.00
	48		B. A. C. 5596	E.	. .	. .	29.5	32.6	35.7	38.7	42.0	. .	. .	35 35.70	− 0.76	. .	−13.01	16 35 21.93	− 2.03

2. Bisections at wires II and III.
3, 8, 9, 15, 46, 47. Bisections at sets B and D.
5. Bisections at wires V and VI.
8, 13. Wire A used.
9. Wire B used.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	293 22	10 10.7	6.4	2.1	6.1	39	. .	985	. .	955	. .	80.4	66 35 27.9	. .	+ 2 7.8	117 43 56.9	−14.5
2	355 8	16.5	12.5	8.8	12.3	32	740	710	. .	. .	. .	80.4	4 47 43.3	. .	+ 4.7	55 54 9.2	+ 2.2
3	299 14	10.2	5.5	1.1	5.2	34	100	. .	. .	. .	090	80.4	60 41 57.3	. .	+ 1 38.9	111 49 57.4	−12.5
4	7 54	6.8	5.8	1.2	3.2	32	560	510	. .	. .	. .	80.4	352 1 32.4	. .	− 7.8	43 7 45.8	+ 4.1
5	10 12	10.0	7.1	3.5	6.5	30	. .	. .	. .	980	005	80.4	349 43 11.1	. .	− 10.1	40 49 22.2	+ 4.3
6	337 2	5.3	3.6	27.0	1.8	36	. .	400	. .	350	. .	80.4	22 54 28.7	. .	+ 23.6	74 1 13.5	− 1.8
7	21 36	13.9	12.1	7.6	8.3	34	010	070	. .	. .	. .	80.4	338 20 2.1	. .	− 22.2	29 26 1.1	+ 4.9
8	26 18	13.7	9.0	4.0	7.5	29	899	. .	. .	. .	860	80.4	333 34 22.9	. .	− 27.7	24 40 16.4	+ 5.0
9	26 18	13.7	9.0	4.0	7.5	32	520	. .	. .	. .	530	80.4	333 40 9.9	. .	− 27.6	24 46 3.5	+ 5.0
10	345 26	10.0	6.1	1.5	4.5	33	485	465	. .	. .	. .	80.4	14 29 47.7	. .	+ 14.4	65 36 23.3	+ 0.1
11	345 26	10.0	6.1	1.5	4.5	30	. .	. .	. .	085	045	80.4	14 28 56.2	. .	+ 14.4	65 35 31.8	+ 0.1
12	259 38	14.0	10.8	5.0	9.8	35	. .	220	. .	140	. .	80.4	70 18 18.1	. .	+ 2 34.7	121 27 14.0	−12.3
13	286 26	12.2	7.9	3.3	6.4	25	. .	. .	. .	755	730	80.4	73 25 18.2	. .	+ 3 5.2	124 34 44.6	−12.8
14	351 36	10.8	8.5	3.0	7.0	37	. .	135	. .	060	. .	80.4	8 20 45.3	. .	+ 8.2	59 27 14.7	+ 0.9
15	47 38	12.5	8.5	4.4	7.8	34	590	. .	. .	. .	. .	80.4	312 18 8.9	. .	− 1 1.5	3 23 28.6	− 3.3
16	312 44	6.5	4.0	29.2	3.5	36	. .	395	. .	365	. .	80.4	47 12 30.1	. .	+ 1 0.5	98 19 51.8	+ 0.8
17	359 42	6.9	4.8	1.2	4.0	32	. .	650	. .	605	. .	80.4	0 13 33.8	. .	+ 0.2	51 19 55.2	+ 0.3
18	53 46	9.3	5.0	1.9	3.5	30	585	. .	585	. .	590	80.4	306 9 2.9	. .	− 1 16.7	357 14 7.4	− 0.4
19	354 16	12.6	11.0	4.8	7.6	35	. .	930	. .	880	. .	80.4	5 40 28.7	70.5	+ 5.6	56 46 55.5	+ 0.2
20	319 46	11.8	12.2	5.2	12.0	32	. .	. .	. .	. .	743	79.1	40 9 40.5	80.9	+ 46.5	91 16 48.2	− 1.6
21	328 26	11.5	11.5	5.3	10.3	34	. .	010	. .	960	. .	79.1	31 29 58.5	75.5	+ 33.7	82 36 53.4	− 1.7
22	328 26	6.6	5.3	0.8	5 3	34	. .	255	. .	215	. .	79.1	31 29 57.2	. .	+ 34.1	82 36 52.5	− 2.1
23	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
24	343 38	2.8	1.7	27.5	1.5	37	. .	010	. .	990	. .	79.1	16 18 36.0	. .	+ 16.2	67 25 13.4	− 4.7
25	337 34	1.5	0.8	25.7	1.5	37	. .	895	. .	865	. .	79.1	22 22 48.4	. .	+ 22.8	73 29 32.4	− 1.2
26	304 30	5.2	5.0	0.3	4.3	29	. .	755	. .	715	. .	79.1	55 24 47.3	. .	+ 1 20.1	106 32 28.6	− 1.6
27	292 16	6.2	5.1	1.2	3.3	31	. .	520	. .	530	. .	79.1	67 39 14.9	. .	+ 2 13.5	118 47 49.6	− 4.1
28	294 54	1.8	0.0	27.6	1.2	38	. .	985	. .	045	. .	79.1	65 3 5.8	. .	+ 1 58.0	116 11 25.0	− 1.4
29	343 16	6.2	5.3	29.6	2.7	36	. .	385	. .	345	. .	79.1	16 40 28.8	. .	+ 16.5	67 47 6.5	− 1.6
30	353 12	5.3	3.4	0.5	3.2	33	. .	. .	. .	110	100	79.1	6 43 39.1	. .	+ 6.5	57 50 6.8	− 2.2
31	326 36	5.8	5.3	0.2	3.0	34	. .	920	. .	910	. .	79.1	33 20 6.7	. .	+ 36.2	84 27 4.1	− 2.4
32	349 22	1.3	1.7	26.1	29.2	33	. .	345	. .	275	. .	79.1	10 33 38.2	. .	+ 10.3	61 40 9.7	− 0.9
33	339 46	16.1	15.6	8.9	14.3	33	230	170	. .	. .	. .	79.1	20 9 50.6	. .	+ 20.1	71 16 31.9	. .
34	339 14	4 1	4.3	25.2	0.6	32	. .	. .	. .	265	290	79.1	20 41 23.9	83.4	+ 20.7	71 48 5.8	. .
35	345 24	3.1	4.6	29.2	3.7	34	. .	955	. .	950	. .	79.1	14 32 6.4	. .	+ 14.2	65 38 41.8	− 1.0
36	333 38	8.7	7.7	3.5	7.7	35	. .	155	. .	165	. .	79.1	26 18 13.8	. .	+ 27.0	77 25 2.0	+ 1.8
37	341 32	2.2	4.3	28.5	2.2	36	. .	985	. .	925	. .	79.1	18 24 36.2	. .	+ 18.2	69 31 15.6	+ 1.4
38	342 16	7.4	9.5	3.7	8.0	36	. .	085	. .	055	. .	79.1	17 40 28.0	. .	+ 17.4	68 47 6.6	− 0.5
39	327 24	3.5	4.0	29.8	2.7	36	. .	045	. .	990	. .	79.1	32 32 22.5	. .	+ 34.7	83 39 18.4	. .
40	336 20	6.0	7.0	1.0	4.5	36	. .	960	. .	015	. .	79.1	23 36 39.5	. .	+ 23.8	74 43 24.5	+ 1.2
41	301 36	9.1	7.0	0.2	4.0	33	. .	870	. .	850	. .	78.9	58 19 51.6	. .	+ 1 30.6	109 27 43.4	+ 0.3
42	317 42	5.5	5.0	28.0	1.8	38	. .	420	. .	360	. .	78.9	42 14 58.6	70.5	+ 50.9	93 22 10.7	− 0.4
43	7 40	11.2	12.3	8.3	10.3	37	. .	200	. .	255	. .	78.9	352 16 49.1	. .	− 7.6	43 23 2.7	− 0.1
44	6 2	7.1	7.5	4.2	5.6	38	025	005	. .	. .	. .	78.9	353 54 56.5	. .	− 6.0	45 1 11.7	+ 5.0
45	294 56	19.5	14.2	11.8	14.2	37	. .	. . .	. .	165	170	78.9	65 0 52.3	. .	+ 1 59.9	116 9 13.4	− 0.5
46	22 8	16.2	14.5	10.3	11.0	36	290	. .	. .	. .	280	78.9	337 48 36.9	. .	− 22.9	28 54 35.2	+ 6.6
47	7 54	8.4	8.8	3.3	3.7	32	275	. .	. .	. .	250	78.9	352 1 28.3	. .	− 7.9	43 7 41.6	+ 5.2
48	10 12	10.8	10.0	4.0	5.7	30	. .	970	. .	950	. .	78.9	349 43 10.3	. .	− 10.2	40 49 21.3	+ 5.4

No.	Barom.	At. Ther.
	in.	°
19	30.12	72.0
20	30.14	76.0
21	30.09	69.5
34	30.09	77.0
42	30.11	73.5

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
33	− 3.0	+ 15 46.9	. .	+ 15 43.9
34	− 3.1	− 15 46.9	. .	− 15 50.0
39	− 4.2	+ 7.5	. .	+ 3.3

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1871.													m. s.	s.	s.	s.	h. m. s.	s.
July 30	1	XVI, 19	E.	34.9	37.6	39.2	45.7	47.8	49.9	56.4	58.2	0.8	39 47.83	− 0.75	. .	−13.02	16 39 34.06	− 2.25
	2.	B. A. C. 5629	E.	. .	. .	. .	. .	. .	. .	54.6	57.3	1.8	40 40.28	− 0.78	. .	−13.02	16 40 26.48	− 2.13
	3	B. A. C. 5717	E.	10.6	15.7	18.9	31.3	35.6	38.6	52.1	55.2	0.5	52 35.50	− 0.80	. .	−13.02	16 52 21.68	− 2.26
	4	B. A. C. 5740	E.	. .	. .	27.0	31.8	36.9	41.7	46.7	. .	. .	55 36.82	− 0.83	. .	−13.02	16 55 22.97	− 2.40
	5	B. A. C. 5745	E.	. .	. .	55.0	0.4	4.8	9.6	14.6	. .	. .	56 4.88	− 0.83	. .	−13.02	16 55 51.03	− 2.40
	6	B. A. C. 5753	E.	. .	. .	. .	. .	. .	. .	16.2	17.6	20.4	58 7.21	− 0.75	. .	−13.02	16 57 53.46	− 2.08
	7	B. A. C. 5757	E.	. .	. .	23.9	25.9	28.0	30.3	34.4	36.0	38.7	58 25.74	− 0.73	. .	−13.02	16 58 11.99	− 2.08
	8	XVII, 1	E.	19.2	22.2	24.0	31.0	33.6	36.0	43.2	44.9	47.8	13 33.54	− 0.77	. .	−13.03	17 13 19.74	− 2.66
	9	XVII, 4	E.	42.4	45.6	47.4	54.8	57.4	59.9	7.4	9.2	12.4	16 57.39	− 0.77	. .	−13.03	17 16 43.59	− 2.76
	10	XVII, 6	E.	13.1	16.5	18.4	26.0	28.7	31.2	38.8	40.9	44.0	22 28.62	− 0.78	. .	−13.03	17 22 14.81	− 2.86
	11	XVII, 9	E.	59.9	3.0	4.8	11.9	14.2	16.7	23.9	25.7	28.7	24 14.31	− 0.77	. .	−13.03	17 24 0.51	− 2.72
	12	XVII, 10	E.	46.0	49.0	51.0	57.9	0.2	2.6	9.7	11.6	14.8	30 0.31	− 0.77	. .	−13.04	17 29 46.50	− 2.71
	13	XVII, 14	E.	1.5	4.6	6.9	15.0	17.7	20.5	28.4	30.5	33.9	38 17.67	− 0.79	. .	−13.04	17 38 3.84	− 3.03
	14	XVII, 15	E.	4.5	7.3	9.1	16.5	18.8	21.3	28.7	30.4	33.5	40 18.90	− 0.77	. .	−13.04	17 40 5.09	− 2.85
	15	XVII, 21	E.	30.0	33.2	35.0	42.3	44.9	47.4	54.8	56.6	59.8	44 44.89	− 0.77	. .	−13.04	17 44 31.08	− 2.92
	16	Anonymous	E.	15.2	18.8	21.1	29.7	32.6	35.6	44.0	46.3	50.0	55 32.59	− 0.76	. .	−13.05	17 55 18.78	− 2.26
	17	B. A. C. 6109	E.	19.0	22.8	24.8	33.8	36.7	39.4	48.2	50.6	54.0	56 36.59	− 0.76	. .	−13.05	17 56 22.78	− 2.27
	18	B. A. C. 6134	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	19	δ Ursæ Minoris	E.	. .	. .	16.0	52.0	25.5	1.0	36.0	. .	. .	13 26.10	− 2.07	. .	−13.05	18 13 10.98	+ 2.21
	20	B. A. C. 6289	E.	57.9	2.0	5.0	17.0	21.0	24.8	36.5	39.8	44.5	22 20.94	− 0.80	. .	−13.06	18 22 7.08	− 2.50
	21	1 Aquilæ	E.	25.0	27.6	29.4	35.4	37.5	39.5	45.7	47.4	49.8	28 37.48	− 0.74	−13.12	−13.07	18 28 23.67	+ 0.12
	22	α Lyræ	E.	40.6	44.1	46.0	53.8	56.5	59.1	6.8	8.9	12.1	32 56.43	− 0.74	−13.01	−13.07	18 32 42.62	− 0.04
	23	51 Cephei, S. P.	E.	. .	. .	8.5	26.5	43.0	2.0	22.5	. .	. .	40 44.50	+ 1.16	. .	−13.07	6 40 31.59	− 2.76
	24	β Lyræ	E.	30.3	32.2	37.0	39.5	41.9	44.4	46.7	51.6	53.5	45 41.90	− 0.74	−13.14	−13.07	18 45 28.09	+ 0.10
	25	δ Aquilæ (R.)	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	26	κ Aquilæ (R.)	E.	. .	. .	. .	. .	. .	. .	31.0	32.6	34.8	30 22.67	− 0.08	. .	−13.09	19 30 9.50	+ 0.10
	27	γ Aquilæ (R.)	E.	19.2	21.7	23.3	29.7	31.7	33.9	40.0	41.6	44.4	40 31.72	+ 0.11	. .	−13.10	19 40 18.73	+ 0.08
	28	α Aquilæ (R.)	E.	41.7	44.0	45.6	. .	. .	. .	2.3	4.0	6.4	44 54.00	+ 0.09	. .	−13.10	19 44 40.99	+ 0.34
	29	B. A. C. 7448	E.	45.9	48.4	54.9	58.1	1.4	4.6	8.0	14.5	17.0	20 1.42	− 0.77	. .	−13.14	21 19 47.51	− 2.60
	30	β Aquarii	E.	59.8	2.4	4.0	10.0	12.0	14.2	20.3	21.9	24.4	25 12.11	− 0.74	−13.17	−13.14	21 24 58.23	+ 0.09
	31	XXI, 8	E.	38.4	41.5	43.4	50.8	53.4	55.8	3.3	5.0	8.1	27 53.30	− 0.77	. .	−13.14	21 27 39.39	− 3.40
	32	XXI, 10	E.	14.7	18.2	20.2	28.3	30.8	33.5	41.4	43.5	46.9	31 30.83	− 0.79	. .	−13.14	21 31 16.90	− 3.01
	33	ε Pegasi	E.	3.9	6.4	8.0	14.0	16.2	18.4	24.5	26.0	28.6	38 16.22	− 0.73	−13.15	−13.15	21 38 2.34	+ 0.01
	34	XXI, 17	E.	23.0	26.0	27.9	34.9	37.4	39.7	47.0	48.9	51.9	40 37.41	− 0.77	. .	−13.15	21 40 23.49	− 3.24
	35	B. A. C. 7636	E.	47.0	51.7	54.5	5.0	8.9	12.6	23.3	25.9	30.4	49 8.81	− 0.78	. .	−13.15	21 48 54.88	− 2.40
	36	XXI, 19	E.	29.0	32.4	34.2	41.9	44.5	47.1	54.9	56.8	59.9	53 44.52	− 0.78	. .	−13.16	21 53 30.58	− 3.41
	37	XXI, 20	E.	14.5	17.6	19.3	26.7	29.1	31.6	38.9	40.7	43.7	55 29.12	− 0.77	. .	−13.16	21 55 15.19	− 3.24
	38	α Aquarii	E.	22.9	25.6	27.2	33.2	35.1	37.4	43.5	45.0	47.4	59 35.26	− 0.73	−13.26	−13.16	21 59 21.37	+ 0.13
	39	B. A. C. 7733	E.	36.0	38.7	40.4	46.9	49.1	51.4	57.8	59.5	2.2	4 49.11	− 0.73	. .	−13.16	22 4 35.22	− 2.32
	40	B. A. C. 7778	E.	. .	. .	32.9	36.5	40.1	43.9	47.6	. .	. .	10 40.20	− 0.79	. .	−13.16	22 10 26.25	− 2.36
	41	B. A. C. 7782	E.	48.0	52.7	55.3	6.4	10.3	13.9	25.0	27.6	32.5	12 10.19	− 0.78	. .	−13.16	22 11 56.25	− 2.36
	42	B. A. C. 7799	E.	27.9	30.8	38.0	41.7	45.2	48.9	52.8	0.1	2.9	15 45.37	− 0.79	. .	−13.16	22 15 31.42	− 2.34
	43	XXII, 4	E.	. .	. .	20.6	22.8	25.0	27.6	32.3	34.0	36.9	19 22.88	− 0.76	. .	−13.16	22 19 8.96	− 3.02
	44	XXII, 7	E.	43.9	46.6	48.3	55.0	57.2	59.5	6.2	7.9	10.8	28 57.27	− 0.76	. .	−13.17	22 28 43.34	− 2.88
	45	XXII, 8	E.	. .	. .	52.4	54.9	57.3	59.5	2.0	. .	. .	30 57.22	− 0.76	. .	−13.17	22 30 43.29	− 3.01
	46	Moon II, N.	E.	35.3	38.0	39.6	46.0	48.2	50.4	56.9	58.5	1.2	37 48.23	− 0.74	. .	−13.17	22 37 34.32	−69.35
	47	B. A. C. 7953	E.	21.5	24.2	32 0	35.9	39.7	43.6	47.5	55.0	57.9	42 39.70	− 0.79	. .	−13.18	22 42 25.73	− 2.22
	48	XXII, 14	E.	48.3	51.0	52.6	59.2	1.4	3.6	10.0	11.7	14.5	49 1.37	− 0.75	. .	−13.18	22 48 47.44	− 2.71
	49	α Piscis Australis	E.	43.8	46.9	48.7	55.6	58.0	0.5	7.5	9.2	12.0	50 58.02	− 0.76	−13.23	−13.18	22 50 44.08	+ 0.09

4. Wire A used; bisections probably at wires C_1 and C_5.
5, 10. Wire B used.
40. Bisections at wires II and III.
42, 45. Bisections at sets B and D.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	301 12	10 12.0	9.1	3.3	5.2	35	. .	515	. .	510	. .	78.9	58 44 19.2	. .	+ 1 32.4	109 52 12.8	−11.1
2	16 58	15.7	13.6	9.9	11.0	35	. .	. .	. .	740	710	78.9	342 58 28.9	. .	− 17.2	34 4 32.9	+ 6.1
3	21 36	13.0	12.1	6.7	6.6	34	105	095	. .	. .	. .	78.9	338 20 0.5	. .	− 22.4	29 25 59.3	+ 6.3
4	26 18	15.1	12.0	6.3	9.3	29	730	. .	. .	. .	700	78.9	333 34 20.8	. .	− 28.0	24 40 14.0	+ 6.3
5	26 18	15.1	12.0	6.3	9.3	32	290	270	. .	. .	. .	78.9	333 40 7.7	. .	− 27.9	24 46 1.0	+ 6.3
6	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
7	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
8	289 38	8.1	6.0	1.5	6.3	35	. .	410	. .	390	. .	78.9	70 18 15.5	. .	+ 2 36.2	121 27 12.9	−12.7
9	286 30	16.5	12.8	10.0	13.0	31	. .	320	. .	210	. .	78.9	73 25 19.8	. .	+ 3 7.0	124 34 48.0	−13.2
10	283 56	10.5	7.0	3.0	6.0	31	055	040	. .	. .	. .	78.9	76 1 43.2	. .	+ 3 42.5	127 11 46.9	−13.5
11	289 38	10.6	7.5	2.8	6.2	35	. .	615	. .	605	. .	78.9	70 18 20.0	. .	+ 2 36.3	121 27 17.5	−12.0
12	290 16	8.0	5.5	0.0	3.6	38	. .	. .	. .	380	365	78.9	69 41 0.1	. .	+ 2 31.3	120 49 52.6	−11.4
13	280 48	15.1	13.1	8.2	9.3	39	150	095	. .	. .	. .	78.9	79 9 17.8	. .	+ 4 46.0	130 20 25.0	−13.1
14	288 28	14.6	12.7	6.7	11.5	35	. .	150	. .	105	. .	78.9	71 28 17.3	. .	+ 2 46.9	122 37 25.4	−11.2
15	287 0	5.6	3.5	27.4	1.2	32	. .	975	. .	955	. .	78.9	72 55 34.6	. .	+ 3 1.9	124 4 57.7	−11.2
16	6 32	4.0	4.5	0.0	1.8	37	. .	050	. .	000	. .	78.9	353 24 38.0	. .	− 6.5	44 30 52.7	+ 4.0
17	6 32	4.0	4.5	0.0	1.8	31	. .	410	. .	400	. .	78.9	353 23 12.0	. .	− 6.6	44 29 26.6	+ 4.0
18	343 16	11.4	8.3	2.9	6.2	37	. .	. .	. .	390	335	78.9	16 40 48.0	. .	+ 17.0	67 47 26.2	+ 1.2
19	47 38	9.9	7.3	3.5	4.5	34	990	. .	015	. .	020	78.9	312 18 10.6	. .	− 1 2.2	3 23 29.6	− 0.6
20	19 46	9.8	7.5	2.3	2.1	35	. .	165	. .	090	. .	78.9	340 10 12.0	. .	− 20.5	31 16 12.7	+ 4.2
21	312 44	6.5	3.8	28.3	0.8	36	. .	350	. .	330	. .	78.9	47 12 26.9	. .	+ 1 1.2	98 19 49.3	− 1.4
22	359 42	2.1	2.0	28.3	0.3	32	. .	715	. .	670	. .	78.9	0 13 29.7	. .	+ 0.2	51 19 51.1	− 2.2
23	53 46	8.4	6.3	2.5	2.0	30	665	. .	595	. .	640	78.9	306 9 1.9	. .	− 1 17.6	357 14 5.5	− 0.5
24	354 16	10.5	3.2	9.0	4.0	35	. .	990	. .	965	. .	78.9	5 40 25.9	64.0	+ 5.6	56 46 52.7	− 0.9
25	215 56	10.7	6.3	3.9	3.4	30	. .	300	. .	260	. .	78.9	143 58 57.9	. .	− 41.3	87 8 4.6	+ 1.6
26	226 6	9.9	7.0	3.2	5.3	30	. .	235	. .	225	. .	78.9	133 48 57.5	. .	− 59.2	97 18 22.9	+ 4.6
27	208 30	5.2	4.0	29.6	1.0	32	. .	130	. .	000	. .	78.9	151 25 21.6	. .	− 31.0	79 41 30.6	+ 1.4
28	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	78.9		. .	. .		. .
29	12 10	6.0	5.0	1.1	1.0	37	. .	920	. .	865	. .	78.9	347 46 52.1	. .	− 12.4	38 53 0.9	+ 0.9
30	314 56	10.3	7.8	3.8	7.2	34	350	410	. .	. .	. .	78.9	45 0 1.5	. .	+ 57.0	96 7 19.7	+ 0.8
31	286 12	6.9	4.0	29.0	1.5	32	. .	145	. .	120	. .	78.9	73 43 22.8	. .	+ 3 12.7	124 52 56.7	+ 9.4
32	281 2	8.8	6.2	2.0	4.1	36	. .	270	. .	100	. .	78.9	78 54 27.2	. .	+ 4 42.5	130 5 30.9	+ 9.8
33	330 20	2.5	0.0	26.0	0.0	31	. .	110	. .	100	. .	78.9	29 35 4.1	. .	+ 32.4	80 41 57.7	− 1.2
34	289 36	10.8	8.2	2.0	6.0	32	. .	805	. .	795	. .	78.9	70 19 37.0	. .	+ 2 38.1	121 28 36.3	+10.4
35	16 40	8.1	6.6	2.8	2.9	37	. .	350	. .	360	. .	78.9	343 16 45.7	. .	− 17.1	34 22 49.8	− 0.2
36	283 58	10.5	8.5	2.9	6.5	39	. .	060	. .	050	. .	78.9	75 59 13.1	. .	+ 3 44.5	127 9 18.8	+11.9
37	288 20	13.6	10.0	5.5	8.0	30	. .	. .	. .	470	525	78.9	71 35 4.5	. .	+ 2 49.5	122 44 15.2	+11.7
38	320 8	10.2	7.4	2.5	6.1	36	. .	505	. .	490	. .	78.9	39 48 33.6	. .	+ 47.5	90 55 42.3	− 0.4
39	341 24	5.5	4.2	28.2	1.4	33	. .	195	. .	125	. .	78.9	18 31 38.4	. .	+ 19.1	69 38 18.7	+ 5.5
40	17 28	10.2	8.3	4.9	5.3	38	180	120	. .	. .	. .	78.9	342 28 59.6	. .	− 18.6	33 35 2.8	− 0.7
41	17 38	12.5	10.7	7.2	7.7	35	. .	765	. .	785	. .	78.9	342 18 26.0	. .	− 18.2	33 24 29.0	− 0.7
42	17 20	11.5	9.2	5.7	5.5	37	530	. .	. .	. .	520	78.9	342 36 50.9	. .	− 17.9	33 42 54.2	− 0.7
43	292 26	9.4	5.2	1.9	4.5	35	. .	170	. .	100	. .	78.9	67 30 11.3	. .	+ 2 16.9	118 38 49.4	+13.5
44	296 26	6.7	5.8	1.3	4.5	34	. .	405	. .	375	. .	78.9	63 29 59.7	. .	+ 1 54.0	114 38 14.9	+13.8
45	291 22	3.8	0.0	25.3	29.8	30	270	. .	. .	. .	370	78.9	68 32 52.1	. .	+ 2 24.2	119 41 37.5	+14.6
46	307 20	8.0	5.7	0.0	3.5	34	200	985	800	635	435	78.9	52 35 50.1	. .	+ 1 14.6	103 43 25.9	. .
47	18 52	4.0	2.5	29.5	0.0	37	. .	610	. .	570	. .	78.9	341 4 45.8	. .	− 19.6	32 10 47.4	− 1.5
48	300 16	9.1	5.3	1.1	4.7	35	. .	880	. .	805	. .	78.9	59 40 21.9	. .	+ 1 37.3	110 48 20.4	+14.7
49	290 48	10.7	7.6	3.0	6.0	35	. .	275	. .	200	. .	78.9	69 8 14.4	60.5	+ 2 28.7	120 17 4.3	− 0.7

No.	Barom.	At. Ther.
	in.	°
24	30.10	68.5
49	30.05	64.5

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
46	− 47 7.7	+ 16 15.2	. .	− 30 52.5

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Aug. 3	1	B. A. C. 5480	S.	47.4	50.6	52.4	59.8	2.3	4.9	12.0	13.9	17.0	18 2.26	— 0.68	. .	—15.33	16 17 46.25	— 1.83
	2	B. A. C. 5497	S.	54.2	57.6	0.0	8.6	11.5	14.3	23.0	25.0	28.7	21 11.43	— 0.74	. .	—15.34	16 20 55.35	— 1.86
	3 ζ	Ophiuchi	S.	. .	. .	27.2	29.2	31.3	33.5	35.5	. .	. .	30 31.34	— 0.56	—15.39	—15.34	16 30 15.44	+ 0.05
	4	XVI, 13	S.	25.5	28.5	30.2	37.5	39.7	42.3	49.4	51.0	54.0	31 39.79	— 0.53	. .	—15.34	16 31 23.92	— 2.30
	5 η	Herculis	S.	. .	. .	47.3	50.0	52.7	55.2	57.9	. .	. .	38 52.62	— 0.71	—15.37	—15.35	16 38 36.56	+ 0.03
	6	B. A. C. 5620	S.	45.5	48.1	49.7	56.0	58.1	0.4	6.7	8.1	10.9	39 58.17	— 0.62	. .	—15.35	16 39 42.20	— 1.96
	7 κ	Ophiuchi	S.	. .	. .	56.1	58.2	0.2	2.4	4.5	. .	. .	52 0.28	— 0.60	—15.38	—15.35	16 51 44.33	+ 0.07
	8	B. A. C. 5714	S.	. .	. .	. .	. .	40.9	43.1	47.7	49.5	52.3	52 38.66	— 0.65	. .	—15.35	16 52 22.66	— 1.98
	9 ε	Ursæ Minoris	S.	. .	. .	48.2	3.2	18.4	33.8	48.8	. .	. .	59 18.48	— 2.28	. .	—15.35	16 59 0.85	— 0.20
	10	B. A. C. 5798[1]	S.	. .	. .	3.7	5.9	8.2	10.5	12.8	. .	. .	6 8.22	— 0.64	. .	—15.36	17 5 52.22	— 2.03
	11	B. A. C. 5798[2]	S.	. .	. .	17.6	19.8	22.0	24.3	26.5	. .	. .	6 22.04	— 0.64	. .	—15.36	17 6 6.04	— 2.03
	12 α[1]	Herculis	S.	. .	. .	7.9	10.0	12.1	14.3	16.3	. .	. .	9 12.12	— 0.61	—15.27	—15.36	17 8 56.15	— 0.07
4	13	B. A. C. 5560	E.	32.5	38.0	41.9	53.6	58.0	2.3	14.8	18.0	23.3	30 57.94	— 1.05	. .	—15.98	16 30 40.91	— 1.99
	14	B. A. C. 5587	E.	. .	. .	13.8	16.0	18.0	20.2	22.4	. .	. .	35 18.08	— 0.77	. .	—15.98	16 35 1.33	— 1.93
	15	B. A. C. 5604	E.	36.3	39.4	41.2	48.5	50.9	53.0	0.4	2.2	5.2	36 50.79	— 0.83	. .	—15.98	16 36 33.98	— 1.89
	16	B. A. C. 5628	E.	59.3	2.8	12.5	17.5	22.3	27.0	31.9	41.4	45.1	40 22.20	— 1.12	. .	—15.98	16 40 5.10	— 2.10
	17 κ	Ophiuchi	E.	48.5	51.1	52.8	59.0	1.0	3.1	9.4	11.0	13.5	52 1.04	— 0.76	—15.98	—15.99	16 51 44.29	+ 0.03
	18	B. A. C. 5740	E.	. .	. .	30.0	34.4	39.5	44.1	49.6	. .	. .	55 39.52	— 1.09	. .	—15.99	16 55 22.44	— 2.19
	19	B. A. C. 5745	E.	. .	. .	57.6	2.4	7.6	12.2	17.4	. .	. .	56 7.44	— 1.09	. .	—15.99	16 55 50.36	— 2.19
	20	B. A. C. 5753	E.	. .	. .	. .	. .	. .	. .	. .	. .	23.2	58 10.57	— 0.78	. .	—15.99	16 57 53.80	— 2.03
	21	B. A. C. 5757	E.	. .	. .	26.7	28.9	31.1	33.1	37.4	38.9	41.6	58 28.92	— 0.78	. .	—15.99	16 58 12.15	— 2.03
	22 ε	Ursæ Minoris	E.	. .	. .	. .	. .	. .	. .	. .	31.0	50.0	59 19.15	— 2.21	. .	—15.99	16 59 0.95	— 0.03
	23 α[1]	Herculis	E.	0.2	2.8	4.4	10.9	13.0	15.0	21.4	22.9	25.6	9 12.91	— 0.78	—15.90	—15.99	17 8 56.14	— 0.07
	24	XVII, 2	E.	33.4	36.0	37.6	44.1	46.4	48.5	55.1	56.8	59.6	13 46.39	— 0.71	. .	—16.00	17 13 29.68	— 2.42
	25	B. A. C. 5886[1]	E.	23.3	26.5	28.4	. .	. .	. .	48.9	50.8	54.0	19 38.65	— 0.85	. .	—16.00	17 19 21.80	— 2.05
	26	B. A. C. 5886[2]	E.	. .	. .	33.7	36.3	39.0	41.6	44.0	. .	. .	19 38.92	— 0.85	. .	—16.00	17 19 22.07	— 2.05
	27	B. A. C. 5929	E.	30.6	34.0	36.0	43.9	46.6	49.2	57.0	58.9	2.4	26 46.51	— 0.86	. .	—16.00	17 26 29.65	— 2.07
	28 α	Ophiuchi	E.	. .	. .	. .	. .	. .	28.1	32.5	34.0	36.6	29 24.04	— 0.77	—15.94	—16.00	17 27 7.27	— 0.03
	29	B. A. C. 6134	E.	49.3	52.0	53.6	0.1	2.4	4.6	11.2	12.9	15.7	2 2.42	— 0.80	. .	—16.02	18 0 45.60	— 2.22
	30	XVIII, 1	E.	3.3	6.3	8.2	15.0	17.4	19.8	26.7	28.5	31.5	4 17.41	— 0.71	. .	—16.02	18 4 0.68	— 2.87
	31	XVIII, 2	E.	. .	. .	56.4	58.8	1.4	2.7	6.0	. .	. .	5 1.06	— 0.70	. .	—16.02	18 4 44.34	— 2.92
	32	XVIII, 6	E.	30.5	33.5	35.0	42.0	44.5	46.8	53.8	55.5	58.4	9 44.44	— 0.71	. .	—16.02	18 9 27.71	— 2.89
	33 δ	Ursæ Minoris	E.	. .	. .	18.0	52.0	27.0	3.5	37.5	. .	. .	13 27.60	— 4.22	. .	—16.03	18 13 7.35	— 0.09
	34 ι	Aquilæ	E.	28.0	30.0	32.1	38.3	40.4	42.6	48.7	50.3	52.8	28 40.42	— 0.73	—16.08	—16.03	18 28 23.66	+ 0.12
	35 α	Lyræ	E.	43.8	47.0	49.0	56.8	59.5	2.0	9.9	11.9	15.1	32 59.44	— 0.86	—15.95	—16.04	18 32 42.54	— 0.07
	36 51	Cephei, S. P.	E.	. .	. .	12.0	31.0	48.0	5.0	22.0	. .	. .	40 47.60	+ 3.77	. .	—16.04	6 40 35.33	— 0.50
	37 β	Lyræ	E.	30.2	33.3	35.0	42.2	44.6	47.1	54.4	56.3	59.4	45 44.72	— 0.84	—15.85	—16.04	18 45 27.84	— 0.13
	38	B. A. C. 6473	E.	. .	. .	3.9	6.6	9.6	12.0	15.0	. .	. .	51 9.42	— 0.87	. .	—16.05	18 50 52.50	— 2.31
	39	B. A. C. 6475	E.	. .	. .	43.5	46.6	49.2	52.0	55.0	. .	. .	51 49.26	— 0.79	. .	—16.05	18 51 32.42	— 2.32
	40	B. A. C. 6542	E.	29.0	31.0	33.5	40.1	42.4	44.7	51.3	53.0	55.9	1 42.42	— 0.80	. .	—16.05	19 1 25.57	— 2.36
	41	B. A. C. 6551	E.	. .	. .	. .	. .	. .	. .	38.2	40.9	45.0	2 24.64	— 0.96	. .	—16.05	19 2 7.63	— 2.41
	42 β	Ursæ Minoris, S. P.	E.	10.4	0.0	55.0	31.9	24.0	16.3	53.1	47.5	37.9	51 24.08	— 0.13	. .	—16.29	14 51 7.66	+ 0.51
	43 α	Ceti	E.	47.7	50.3	51.8	57.9	59.9	2.0	8.1	9.7	12.2	55 59.96	— 0.64	—16.35	—16.29	2 55 43.03	+ 0.05
	44	Moon II, N.	E.	59.3	1.9	3.6	10.3	12.6	14.8	21.4	23.0	25.8	8 12.52	— 0.66	. .	—16.29	3 7 55.57	—70.98
	45 η	Tauri	E.	4.5	7.4	9.0	15.6	17.9	20.1	26.8	28.5	31.3	40 17.90	— 0.66	—16.33	—16.31	3 40 0.93	+ 0.05
	46 ζ	Persei	E.	16.6	19.6	21.5	28.6	31.0	33.5	40.6	42.4	45.4	46 31.02	— 0.68	—16.38	—16.31	3 46 14.03	+ 0.05
	47 γ[1]	Eridani	E.	14.4	17.0	18.7	25.0	27.0	29.0	35.4	37.0	39.6	52 27.01	— 0.63	—16.36	—16.32	3 52 10.06	+ 0.05
	48 ε	Tauri	E.	20.6	23.3	25.4	31.5	33.6	35.6	42.2	43.9	46.5	21 33.62	— 0.66	—16.43	—16.33	4 21 16.63	+ 0.05
	49 α	Tauri	E.	46.7	49.3	51.0	57.2	59.4	1.5	8.0	9.6	12.2	28 59.43	— 0.65	—16.41	—16.33	4 28 42.45	+ 0.05
	50 ι	Aurigæ	E.	50.7	53.7	55.5	2.8	5.2	7.7	14.9	16.8	19.8	49 5.23	— 0.68	—16.37	—16.34	4 48 48.21	— 0.05
	51 ε	Ursæ Minoris, S. P.	E.	. .	. .	47.9	33.3	18.3	2.2	48.2	. .	. .	59 17.98	+ 0.20	. .	—16.34	16 59 2.84	+ 1.93

6. Telescope micrometer reading decreased one revolution in reduction.
18, 20. Wire A used.
19. Wire B used.
22. Bisections at wires V and VI.
42. Bisections at sets B and D.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	″	° ′ ″	″
1	355 2	10 12.3	11.0	5.5	8.0	32	. .	. .	. .	700	674	78.5	4 53 38.3	73.0	+ 4.8	56 0 4.3	+ 3.5
2	6 2	13.6	12.3	7.6	9.7	37	. .	. .	. .	720	770	78.5	353 54 57.5	. .	− 5.9	45 1 12.8	+ 5.5
3	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. . .	. .
4	290 52	16.4	12.7	6.2	9.2	34	. .	. .	. .	560	650	78.5	69 4 8.9	. .	+ 2 24.8	120 12 54.9	−14.6
5	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. . .	. .
6	337 2	12.3	10.3	2.3	6.8	37	. .	. .	. .	017	987	78.5	22 54 27.6	71.0	+ 23.7	74 1 12.5	− 0.6
7	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. . .	. .
8	346 36	16.0	13.9	10.0	7.5	35	. .	. .	. .	740	760	78.5	13 20 27.7	. .	+ 13.3	64 27 2.2	+ 1.8
9	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. . .	. .
10	345 26	17.4	15.1	7.8	11.2	32	. .	990	. .	. .	. .	78.5	14 29 45.7	. .	+ 14.5	65 36 21.4	+ 1.7
11	345 26	17.4	15.1	7.8	11.2	29	. .	. .	. .	702	. .	78.5	14 28 56.0	. .	+ 14.5	65 35 31.7	+ 1.7
12	335 34	14.7	12.5	5.5	9.6	30	. .	. .	. .	412	436	78.5	24 21 4.8	69.2	+ 25.4	75 27 51.4	+ 0.2
13	22 8	11.6	10.0	6.7	7.0	36	. .	580	. .	550	. .	78.3	337 48 37.0	. .	− 23.1	28 54 35.1	+ 7.3
14	333 42	1.5	0.0	25.3	0.0	37	595	590	. .	. .	. .	78.3	26 14 42.2	. .	+ 27.9	77 21 31.3	− 1.4
15	352 52	6.0	5.0	29.4	3.7	32	. .	590	. .	545	. .	78.3	7 3 30.1	. .	+ 7.0	58 9 58 3	+ 3.2
16	25 52	5.0	3.0	29.3	1.5	35	. .	660	. .	575	. .	78.3	334 4 14.4	. .	− 27.5	25 10 8.1	+ 7.3
17	330 38	10.5	8.9	3.6	6.8	37	. .	285	. .	225	. .	78.3	29 18 45.6	68.0	+ 31.8	80 25 38.6	− 0.6
18	26 18	16.0	12.2	8.3	9.4	29	. .	580	. .	550	. .	78.3	333 34 19.4	. .	− 28.2	24 40 12.4	+ 7.1
19	26 18	16.0	12.2	8.3	9.4	32	. .	. .	220	210	. .	78.3	333 40 6.2	. .	− 28.0	24 45 59.4	+ 7.1
20	334 48	9.2	6.3	1.0	3.8	36	. .	. .	. .	725	695	78.3	25 6 2.1	. .	+ 26.5	76 12 49.8	− 0.8
21	334 48	9.2	6.3	1.0	3.8	35	. .	. .	. .	010	030	78.3	25 8 9.5	. .	+ 26.6	76 14 57.3	− 0.8
22	43 16	9.0	6.5	2.7	3.5	34	. .	. .	. .	030	025	78.3	316 39 55.8	. .	− 53.4	7 45 23.6	− 1.5
23	335 34	7.2	4.9	29.3	3.2	30	. .	860	. .	850	. .	78.3	24 21 3.8	. .	+ 25.6	75 27 50.6	− 0.5
24	300 6	10.7	7.8	2.8	6.0	37	. .	010	. .	000	. .	78.3	59 50 41.0	. .	+ 1 37.2	110 58 39.4	− 9.9
25	358 18	13.8	12.1	7.5	8.2	32	. .	885	. .	840	. .	78.3	1 37 41.5	. .	+ 1.6	52 44 4.3	+ 4.2
26	358 18	13.8	12.1	7.5	8.2	33	. .	. .	. .	085	050	78.3	1 37 44.6	. .	+ 1.6	52 44 7.4	+ 4.2
27	0 2	4.1	3.7	0.0	1.7	38	. .	130	. .	075	. .	78.3	359 54 53.7	. .	− 0.1	51 1 14.8	+ 4.5
28	333 42	6.8	6.8	0.5	4.0	34	. .	. .	. .	220	210	78.3	26 13 56.6	. .	+ 28.0	77 20 45.8	− 1.3
29	343 16	9.4	7.5	2.0	3.5	37	. .	485	. .	480	. .	78.3	16 40 47.3	. .	+ 17.0	67 47 25.5	+ 2.1
30	292 10	9.8	8.0	1.5	5.5	38	390	380	. .	. .	. .	78.3	67 47 1.0	. .	+ 2 18.2	118 55 40.4	− 8.9
31	290 6	12.3	9.3	3.5	6.8	33	. .	. .	. .	035	025	78.3	69 49 41.4	. .	+ 2 33.4	120 58 36.0	− 9.3
32	292 24	9.0	5.3	1.3	2.5	38	. .	460	. .	440	. .	78.3	67 33 0.8	. .	+ 2 16.7	118 41 38.7	− 8.4
33	47 38	9.2	6.4	1.8	4.7	34	. .	915	. .	935	. .	78.3	312 18 8.0	. .	− 1 2.4	3 23 26.8	− 2.2
34	312 44	6.2	4.2	29.8	4.1	36	. .	360	. .	260	. .	78.3	47 12 27.2	. .	+ 1 1.5	98 19 49.9	− 0.6
35	359 42	9.0	7.1	2.5	4.4	32	. .	350	. .	340	. .	78.3	0 13 28.9	. .	+ 0.2	51 19 50.3	− 1.8
36	53 46	10.3	6.5	4.0	4.3	30	440	. .	460	. .	450	78.3	306 9 0.1	. .	− 1 17.8	357 14 3.5	− 1.1
37	354 16	9.8	8.9	2.8	3.7	35	. .	960	. .	950	. .	78.3	5 40 24.7	. .	+ 5.7	56 46 51.6	− 0.8
38	2 28	11.8	8.0	4.5	6.0	30	710	640	. .	. .	. .	78.3	357 27 5.0	. .	− 2.5	48 33 23.7	+ 4.4
39	4 50	2.2	1.2	27.1	28.2	37	. .	. .	. .	735	725	78.3	355 6 45.9	. .	− 4.9	46 13 2.2	+ 4.5
40	345 6	9.1	6.1	2.3	3.2	34	030	000	. .	. .	. .	78.3	14 49 53.6	. .	+ 15.1	65 56 29.9	+ 3.2
41	14 14	6.4	4.5	1.0	1.7	32	. .	. .	. .	765	740	78.3	345 41 33.4	64.0	− 14.6	36 47 40.0	+ 4.7
42	66 20	7.8	4.5	0.1	1.2	35	300	. .	. .	. .	285	80.3	293 36 13.2	. .	− 2 11.3	344 40 23.1	+ 2.5
43	324 38	5.2	4.8	0.9	2.0	30	. .	720	. .	660	. .	80.3	35 17 2.8	58.0	+ 40.8	86 24 4.8	− 0.5
44	340 16	3.8	2.2	29.3	0.5	35	050	895	710	590	300	80.3	19 40 2.7	. .	+ 20.6	70 46 44.5	. .
45	344 46	4.5	2.4	29.5	1.2	36	. .	080	. .	045	. .	80.3	15 10 23.9	. .	+ 15.5	66 17 0.6	− 1.0
46	352 34	1.0	28.8	27.1	0.2	38	. .	455	. .	405	. .	80.3	7 22 57.6	. .	+ 7.4	58 29 26.2	− 0.6
47	307 12	3.8	1.2	29.7	3.5	35	. .	035	. .	015	. .	80.3	52 44 7.9	. .	+ 1 14.8	103 51 43.9	− 0.1
48	339 56	4.7	3.1	28.8	1.0	31	. .	270	. .	210	. .	80.3	19 59 10.0	. .	+ 20.6	71 5 51.8	− 0.5
49	337 18	4.7	3.4	0.7	3.5	33	. .	705	. .	655	. .	80.3	22 37 48.7	. .	+ 23.6	73 44 33.5	− 0.1
50	354 0	7.4	5.5	4.0	4.4	32	. .	745	. .	725	. .	80.3	5 55 36.4	. .	+ 5.9	57 2 3 5	+ 1.3
51	58 46	5.8	3.1	2.2	3.7	33	475	510	. .	. .	. .	80.3	301 9 46.1	70.5	− 1 32.9	352 14 34.4	− 0.6

No.	Barom.	At. Ther.
	in.	°
1	30.07	76.0
12	30.075	73.0
17	30.21	71.5
41	30.21	67.5
43	30.19	59.0
51	30.20	65.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	″
44	−19 38.1	+ 16 5.4	. .	− 3 32.7

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Aug. 5	1	γ Geminorum . .	S.	34.0	35.7	39.9	42.1	44.4	46.4	48.6	52.8	54.3	30 44.24	— 0.69	—17.13	—17.20	6 30 26.35	— 0.10
	2	α Canis Majoris. .	S.	40.7	43.5	45.1	51.3	53.5	55.6	2.0	3.6	6.2	39 53.50	— 0.70	—17.25	—17.21	6 39 35.59	— 0.04
	3	ϵ Canis Majoris. .	S.	44.3	47.0	48.8	55.9	58.0	0.7	7.5	9.3	12.2	53 58.19	— 0.73	—17.31	—17.21	6 53 40.25	+ 0.05
	4	δ Canis Majoris. .	S.	. .	. .	. .	33.6	36.0	38.4	42.9	44.5	47.5	3 33.75	— 0.72	—17.22	—17.21	7 3 15.82	— 0.04
	5	α^2 Geminorum . .	S.	40.2	42.0	46.9	49.4	51.9	54.2	56.6	1.4	3.3	26 51.77	— 0.71	—17.22	—17.22	7 26 33.84	+ 0.24
	6	α Canis Minoris .	S.	48.0	50.7	52.2	58.3	0.3	2.5	8.6	10.1	12.6	33 0.37	— 0.69	—17.25	—17.23	7 32 42.45	— 0.14
	7	β Geminorum . .	S.	40.5	43.4	45.1	51.9	54.4	56.7	3.7	5.5	8.3	37 54.39	— 0.70	—17.14	—17.23	7 37 36.46	— 0.12
6	8	Sun II, S. . . .	S.	3.5	6.2	7.8	14.2	16.4	18.6	24.8	26.5	29.2	7 16.36	— 0.69	. .	—17.27	9 6 58.40	—66.19
	9	β Leonis	S.	. .	. .	52.3	54.3	56.4	58.6	0.8	. .	. .	42 56.48	— 0.69	—17.36	—17.35	11 42 38.44	— 0.01
14	10	ϵ Canis Majoris. .	Sk.	. .	52.3	53.7	58.6	1.0	. .	12.7	14.2	17.1	54 3.22	— 0.80	—22.08	—22.03	6 53 40.39	0.00
	11	δ Canis Majoris. .	Sk.	. .	. .	34.4	36.6	38.7	41.3	43.4	. .	. .	3 38.88	— 0.80	—22.08	—22.03	7 3 16.05	0.00
	12	α^2 Geminorum . .	Sk.	42.3	45.3	47.2	54.4	56.9	59.3	6.5	8.3	11.4	26 56.84	— 0.71	—22.09	—22.04	7 26 34.09	+ 0.29
	13	α Canis Minoris .	Sk.	53.1	55.7	57.3	3.4	5.6	7.6	13.6	15.1	17.7	33 5.46	— 0.73	—22.12	—22.04	7 32 42.69	— 0.08
15	14	Sun S.	Sk.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	15	Sun II, N. . . .	Sk.	14.2	16.8	18.5	24.8	26.9	29.0	35.6	36.9	39.5	41 26.91	— 0.72	. .	—22.08	9 41 4.11	. .
	16	β Leonis	Sk.	. .	. .	57.0	59.2	1.3	3.4	5.6	. .	. .	43 1.30	— 0.72	—22.18	—22.12	11 42 38.46	+ 0.04
	17	Jupiter I, N. . .	Sk.	56.0	58.5	0.2	. .	. .	. .	16.4	18.0	20.5	8 8.27	— 0.74	. .	—22.13	12 7 45.40	. .
	18	Jupiter II, S. . .	Sk.	. .	. .	6.2	8.3	10.3	12.3	14.4	. .	. .	8 10.30	— 0.74	. .	—22.13	12 7 47.43	. .
	19	Moon, I . . .	Sk.	54.2	57.2	58.8	2.9	5.0	7.0	. .	. .	. .	18 7.05	— 0.74	. .	—22.13	12 17 44.18	+61.16
	20	12 Canum Venat. .	Sk.	15.9	19.1	21.1	29.0	31.6	34.3	42.1	43.9	47.3	50 31.59	— 0.71	—22.27	—22.15	12 50 8.73	+ 0.12
	21	Polaris, S. P. . .	Sk.	. .	. .	. .	. .	. .	. .	26.0	24.0	37.0	13 11.07	+ 1.22	. .	—22.15	1 12 50.14	— 6.28
	22	κ Ophiuchi . . .	Sk.	54.7	57.3	58.8	5.0	7.1	9.1	15.3	16.8	19.5	52 7.07	— 0.71	—22.20	—22.22	16 51 44.14	+ 0.02
	23	B. A. C. 5752 . .	Sk.	. .	. .	20 0	24.0	27.6	31.5	35.1	. .	. .	57 27.64	— 0.68	. .	—22.23	16 57 4.73	— 1.70
	24	α^1 Herculis . . .	Sk.	. .	. .	14.6	16.7	18.8	20.9	23.0	. .	. .	9 18.80	— 0.70	—22.00	—22.23	17 8 55.87	— 0.21
	25	B. A. C. 5847 . .	Sk.	28.8	32.1	34.0	41.8	44.2	47.0	54.7	56.5	59.8	13 44.32	— 0.68	. .	—22.23	17 13 21.41	— 1.83
	26	XVII, 6 . . .	Sk.	22.1	25.3	27.2	35.0	37.5	40.1	47.7	49.9	52.9	22 37.52	— 0.82	. .	—22.24	17 22 14.46	— 2.69
	27	α Ophiuchi . . .	Sk.	17.6	20.2	21.7	27.9	30.0	32.1	38.4	40.0	42.6	29 30.06	— 0.70	—22.15	—22.24	17 29 7.12	— 0.06
	28	B. A. C. 5990 . .	Sk.	1.8	5.5	7.6	16.6	19.5	22.4	31.1	33.3	36.9	36 19.41	— 0.68	. .	—22.24	17 35 56.49	— 1.89
	29	B. A. C. 6036 . .	Sk.	.	. .	3.8	7.0	10.1	13.2	16.3	. .	. .	44 10.08	— 0.68	. .	—22.25	17 43 47.15	— 1.92
	30	B. A. C. 6056 . .	Sk.	52.0	56.0	58.1	7.4	10.5	13.7	22.7	24.9	29.0	47 10.48	— 0.68	. .	—22.25	17 46 47.55	— 1.93
	31	B. A. C. 6134 . .	Sk.	55.2	58.0	59.6	6.3	8.6	10.7	17.4	19.0	21.9	1 8.52	— 0.69	. .	—22.25	18 0 45.58	— 2.09
	32	B. A. C. 6178 . .	Sk.	20.4	23.3	25.1	32.1	34.6	37.1	44.2	46.0	49.2	7 34.67	— 0.69	. .	—22.25	18 7 11.73	— 2.06
	33	δ Ursæ Minoris . .	Sk.	. .	. .	17.0	50.5	23.0	0.0	34.5	. .	. .	13 25.00	— 1.06	. .	—22.25	18 13 1.69	— 2.07
	34	α Lyræ	Sk.	49.7	53.0	54.8	2.6	5.6	8.1	15.9	17.9	21.2	33 5.42	— 0.68	—22.25	—22.26	18 32 42.48	+ 0.01
	35	51 Cephei, S. P. . .	Sk.	. .	. .	. .	. .	34.0	20.0	38.5	. .	. .	41 2.80	— 0.03	. .	—22.27	6 40 40.50	+ 0.35
	36	β Lyræ	Sk.	36.0	39.2	41.1	48 4	50.8	53.2	0.5	2.4	5.4	45 50.78	— 0.68	—22.22	—22.27	18 45 27.83	— 0.02
	37	ζ Aquilæ	Sk.	19.9	22.5	24.0	0.3	2.5	4.6	10.8	12.5	15.0	0 2.46	— 0.70	—22.27	—22.27	18 59 39.4	+ 0.08
18	38	α^2 Geminorum . .	Sk.	44 2	47.2	49.0	. .	. .	. .	8.3	10.2	13.2	26 58.68	— 0.75	—23.78	—23.73	7 26 34.20	+ 0.29
	39	α Canis Minoris .	Sk	55.0	57.6	59.0	5.1	7.3	9.3	15.5	17.0	19.6	33 7.27	— 0.77	—23.81	—23.73	7 32 42.77	— 0.08
	40	β Geminorum . .	Sk.	47.6	50.4	52.1	59.0	1.4	3.6	10.5	12.4	15.3	38 1.36	— 0.75	—23.78	—23.73	7 37 36.88	+ 0.02
19	41	Sun I, S. . . .	Sk.	0.9	3.3	5.0	. .	. .	. .	21.9	23.3	26.0	54 13.40	— 0.76	. .	—23.77	9 53 48.87	. .
	42	Sun II, N. . . .	Sk.	. .	. .	19.4	21.7	23.8	25.7	28.3	. .	. .	56 23.78	— 0.76	. .	—23.77	9 55 59.25	. .
	43	B. A. C. 5863 . .	Sk.	8.6	11.6	13.4	20.7	23.2	25.5	33.0	34.7	37.8	16 23.17	— 0.74	. .	—23.90	17 15 58.53	— 1.79
	44	B. A. C. 5836 . .	Sk.	31.2	34.5	36.5	44.1	46.7	49.3	56.9	59.0	2.1	19 46.70	— 0.73	. .	—23.90	17 19 22.07	— 1.77
	45	B. A. C. 5929 . .	Sk.	38.5	41.9	43.8	51.8	54.5	57.0	4.9	6.9	10.1	26 54.38	— 0.73	. .	—23.90	17 26 29.75	— 1.79
	46	μ Herculis . . .	Sk.	44.3	47.2	49.0	55.9	58.2	0.9	7.4	9.2	12.0	41 58.23	— 0.74	—23.92	—23.91	17 41 33.58	+ 0.01
	47	B. A. C. 6052 . .	Sk.	. .	. .	27.2	30.2	33.3	36.6	43.3	45.7	49.6	46 30.26	— 0.74	. .	—23.91	17 46 5.61	— 1.82
	48	γ^2 Sagittarii . .	Sk.	56.0	59.0	0.9	7.9	10.3	12.8	19.7	21.6	24.6	58 10.31	— 0.85	—23.85	—23.91	17 57 45.55	— 0.05
	49	B. A. C. 6147 . .	Sk.	26.9	29.8	31.6	38.8	41.2	43.5	50.8	52.6	55.4	2 41.18	— 0.74	. .	—23.91	18 2 16.53	— 1.99
	50	B. A. C. 6203 . .	Sk.	53.9	57.3	59.4	7.8	10.5	13.1	21.6	23.6	27.0	12 10.47	— 0.73	. .	—23.92	18 11 45.82	— 1.96

10. Telescope micrometer reading increased one revolution in reduction.
48. Microscope readings very discordant.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	337 34	10 13.9	12.8	6.3	11.8	37	. .	. .	. .	084	138	79.0	22 22 48.2	77.2	+ 22.9	73 29 32.3	− 1.1
2	304 30	0.3	1.0	25.3	0.3	29	. .	950	. .	960	. .	79.0	55 24 46.1	. .	+ 1 20.2	106 32 27.5	− 1.4
3	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
4	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
5	353 12	7.9	7.6	1.5	4.4	33	. .	. .	. .	130	030	79.0	6 43 40.5	82.2	+ 6.5	57 50 8.2	− 1.2
6	326 36	6.1	9.5	2.4	5.2	34	. . .	770	. .	748	. .	79.0	33 20 7 1	. .	+ 36.2	84 27 4.5	− 1.5
7	349 22	2.6	3.2	26.0	29.8	33	. .	338	. .	310	. .	79.0	10 33 39.1	82.3	+ 10.2	61 40 10.5	− 1.6
8	337 26	5.4	5.3	0.5	2.1	37	. .	. .	. .	126	110	79.0	22 30 40.1	85.7	+ 22.6	73 37 23.9	. .
9	336 20	0.1	2.0	23.5	28.9	37	. .	. .	. .	. .	330	79.0	23 36 39.1	89.3	+ 23.7	74 43 24.0	+ 0.6
10	294 16	8.5	6.2	1.3	4.0	31	. .	340	. .	240	. .	77.6	65 39 26.2	. .	+ 2 1.3	116 47 48.7	− 1.4
11	294 54	4.6	4.5	28.9	3.1	38	. .	672	. .	590	. .	77.6	65 3 1.1	. .	+ 1 58.0	116 11 20.3	− 2.7
12	353 12	2.6	0.4	28.3	29.5	33	. .	590	. .	550	. .	77.6	6 43 41.4	. .	+ 6.5	57 50 9.1	− 1.1
13	326 36	5.0	4.7	29.5	1.1	34	. .	989	. .	905	. .	77.6	33 20 4.7	79.2	+ 36.3	84 27 2.2	− 3.4
14	334 46	12.4	12.9	11.5	5.5	35	392	598	. .	. .	. .	77.6	25 10 21.2	. .	+ 25.7	76 17 8.1	. .
15	335 18	9.4	9.5	5.4	6.5	37	. .	. .	. .	102	209	77.6	24 38 43.7	83.2	+ 25.1	75 45 30.0	. .
16	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
17	321 28	9.5	0.7	3.8	8.5	34	008	970	. .	. .	. .	77.6	38 27 52.6	. .	+ 43.1	89 34 56.9	. .
18	321 28	9.5	0.7	3.8	8.5	35	. .	. .	. .	827	841	77.6	38 28 21.6	. .	+ 43.1	89 35 25.9	. .
19	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		87.6	. .		. .
20	0 2	3.3	5.0	2.6	3.6	33	. .	210	. .	147	. .	77.6	359 53 38.8	. .	− 0.1	50 59 59.7	+ 1.1
21	52 22	3.5	3.5	0.3	28.2	30	. .	. .	850	916	008	77.6	307 33 1.7	86.8	− 1 10.6	358 38 12.3	+ 2.1
22	330 38	15.1	12.0	5.4	11.2	37	. .	230	. .	165	. .	77.5	29 18 47.4	. .	+ 31.2	80 25 39.8	+ 1.4
23	17 54	12.0	9.6	3.0	3.0	31	. .	840	. .	830	. .	77.5	342 1 21.7	74.5	− 18.1	33 7 24.8	+ 8.0
24	335 34	7.4	5.7	28.4	2.1	30	. .	944	. .	952	. .	77.5	24 21 4.2	. .	+ 25 2	75 27 50.6	+ 0.5
25	358 28	18.4	16.6	10.4	11.5	33	. .	955	. .	991	. .	77.5	1 28 1.8	. .	+ 1.4	52 34 24.4	+ 5.7
26	283 56	16.4	12.4	5.3	7.8	41	050	018	. .	. .	. .	77.5	76 1 44.9	. .	+ 3 40.2	127 11 46.3	−13.3
27	333 42	13.4	10.0	3.3	7.3	34	092	092	. .	. .	. .	77.5	26 13 57.3	. .	+ 27.5	77 20 46.0	0.0
28	7 6	12.3	10.6	3.7	5.3	31	190	142	. .	. .	. .	77.5	352 49 12.2	. .	− 7.0	43 55 26.4	+ 7.1
29	8 42	10.3	7.0	1.5	4.7	45	523	532	. .	. .	. .	77.5	351 16 50.1	. .	− 8.6	42 23 2.7	+ 7.3
30	9 28	17.0	12.0	6.1	10.7	33	760	840	. .	. .	. .	77.5	350 27 56.1	. .	− 9.4	41 34 7.9	+ 7.4
31	343 16	15.9	11.5	3.7	8.2	37	. .	158	. .	143	. .	77.5	16 40 45.6	. .	+ 16.8	67 47 23.6	+ 3.6
32	352 24	17.4	12.1	4.4	5.0	29	835	840	. .	. .	. .	77.5	7 30 53.4	. .	+ 7.4	58 37 22.0	+ 5.3
33	47 38	18.7	13.9	6.5	9.4	34	470	. .	405	. .	368	77 5	312 18 6.0	. .	− 1 1.6	3 23 25.6	− 1.1
34	359 42	15.2	11.4	6.0	9.6	32	020	030	. .	. .	. .	77.5	0 13 27.8	70.4	+ 0.2	51 19 49.2	− 0.6
35	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
36	354 16	14.0	12.1	3.6	3.3	35	. .	780	. .	685	. .	77.5	5 40 22.4	. .	+ 5.6	56 46 49.2	− 0.8
37	334 44	14.3	10.8	2.0	7.0	36	. .	082	. .	000	. .	77.5	25 12 27.3	67.3	+ 26.6	76 19 15.1	− 0.3
38	353 12	3.4	3.5	29.5	26.8	33	. .	600	. .	591	. .	77.8	6 43 42.5	. .	+ 6.8	57 50 10.5	0.0
39	326 36	5.1	5.8	0.3	0.6	35	. .	050	. .	010	. .	77.8	33 20 6.5	. .	+ 36.2	84 27 3.9	− 1.5
40	349 22	0.3	2.1	26.6	26.8	33	. .	560	. .	480	. .	77.8	10 33 39.5	84.5	+ 10.3	61 40 11.0	− 0.9
41	333 28	9 29.9	28.3	21.4	26.6	36	690	596	. .	. .	. .	77.8	26 27 24.9	. .	+ 27.0	77 34 13.1	. .
42	334 0	26.7	29.3	21.0	26.2	33	. .	. .	. .	953	890	77.8	25 55 42.4	. .	+ 26.4	77 2 30.0	. .
43	353 40	10 0.0	28.8	23.0	25.6	33	460	440	. .	. .	. .	76.9	6 15 35.3	. .	+ 6.1	57 22 2.6	+ 5.3
44	358 18	16.8	14.0	6.6	10.6	33	. .	000	. .	928	. .	76.9	1 37 43.2	. .	+ 1.6	52 44 6.0	+ 6.2
45	0 2	7.5	3.9	5.5	7.6	37	. .	898	. .	867	. .	76.9	359 54 52.7	81.0	− 0.1	51 1 13.8	+ 6.6
46	348 50	3.3	1.1	23.9	0.1	33	. .	427	. .	415	. .	76.9	11 5 37.8	. .	+ 10.8	62 12 9.8	+ 0.1
47	11 50	1.8	0.4	23.6	27.5	30	. .	. .	. .	993	008	76.9	348 5 0.3	. .	− 11.7	39 11 9.8	+ 8.2
48	290 40	9 28.9	22.5	1.0	8.2	37	868	. .	. .	. .	. .	76.9	69 16 45.4	. .	+ 2 25.0	120 25 31.6	− 2.2
49	351 36	10 14.7	13.4	3.5	8.0	36	. .	843	. .	875	. .	76.9	8 20 40.7	. .	+ 8.1	59 27 10.0	+ 5.7
50	3 10	7.4	5.0	0.0	1.1	36	760	720	. .	. .	. .	76.9	356 46 32.3	. .	− 3.1	47 52 50.4	+ 7.5

No.	Barom.	At. Ther.
	in.	°
1	30.160	71.5
6	30.15	78.5
13	30.09	75.3
15	30.09	78.3
17	30.08	84.5
21	30.09	82.4
23	30.11	77.2
34	30.12	73.0
37	30.12	71.3
40	30.32	78.3
45	30.22	82.4

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
8	− 3.3	− 15 48.8	. .	− 15 52.1
14	− 3.7	− 15 49.0	. .	− 15 52.7
15	− 3.6	+ 15 49.0	. .	+ 15 45.4
17	− 0.9	+ 14.5	. .	+ 13.6
18	− 0.9	− 14.5	. .	− 15.4
41	− 3.9	− 15 51.5	. .	− 15 55.4
42	− 3.8	+ 15 51.5	. .	+ 15 47.7

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Aug. 19	1	η Serpentis . . .	Sk.	2.2	4.7	6.3	12.4	14.4	16.5	22.5	24.0	26.6	14 14.40	− 0.78	−23.89	−23.92	18 14 49.70	+ 0.03
	2	B. A. C. 6335 . .	Sk.	25.1	29.2	31.6	41.8	45.0	48.4	58.2	0.7	4.9	29 44.99	− 0.74	. .	−23.92	18 29 20.33	− 2.00
	3	α Lyræ	Sk.	51.4	54.8	56.7	4.5	7.1	9.7	17.5	19.4	22.6	33 7.08	− 0.73	−23.93	−23.92	18 32 42.43	+ 0.03
	4	51 Cephei, S. P. . .	Sk.	. .	. .	30.5	48.0	5.0	23.5	42.5	. .	. .	41 5.90	+ 0.38	. .	−23.92	6 40 42.36	+ 0.62
	5	β Lyræ	Sk.	40.9	42.7	47.6	50.1	52.6	55.0	57.5	2.3	4.1	45 52.53	− 0.74	−23.96	−23.93	18 45 27.86	+ 0.06
	6	B. A. C. 6551 . .	Sk.	11.8	16.0	18.7	29.0	32.2	35.8	45.9	48.3	52.9	2 32.29	− 0.74	. .	−23.93	19 2 7.62	− 2.13
	7	B. A. C. 6579[1]. .	Sk.	57.3	1.2	3.5	. .	. .	. .	28.6	31.0	35.2	9 16.13	− 0.73	. .	−23.93	19 8 51.47	− 2.15
	8	B. A. C. 6579[2]. .	Sk.	. .	. .	10.6	13.7	17.0	20.2	23.2	. .	. .	9 16.94	− 0.73	. .	−23.93	19 8 52.28	− 2.15
	9	B. A. C. 6642 . .	Sk.	56.8	59.4	0.9	7.3	9 5	11.6	18.0	19.6	22.4	19 9.50	− 0.75	. .	−23.94	19 18 44.81	− 2.36
	10	B. A. C. 6687 . .	Sk.	. .	. .	41.3	44.5	47.9	51.3	54.5	. .	. .	24 47.90	− 0.74	. .	−23.94	19 24 23.22	− 2.21
	11	B. A. C. 6718 . .	Sk.	45.2	48.8	50.7	58.9	1.8	4.4	12.7	14.7	18.2	31 1.71	− 0.73	. .	−23.94	19 30 37.04	− 2.23
	12	γ Aquilæ. . . .	Sk	30.8	33.3	34.9	41.2	43.3	45.3	51.5	53.1	55.7	40 43.23	− 0.76	−23.81	−23.94	19 40 18.53	− 0.10
	13	α Aquilæ. . . .	Sk.	52.9	55.5	57.0	3.2	5.3	7.3	13.6	15.0	17.6	45 5.38	− 0.76	−23.94	−23.94	19 44 40.68	+ 0.04
	14	κ Cephei (R.) .	Sk.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	15	ϵ Delphini (R.) .	Sk.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	16	α Cygni (R.) .	Sk.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
25	17	α Canis Minoris .	S.	58.4	1.1	2.6	8.6	10.8	12.8	19.0	20.4	23.0	33 10.74	− 0.94	−26.96	. .		. .
	18	β Geminorum . .	S.	50.6	53.7	55.3	2.3	4.7	7.0	14.0	15.8	18.6	38 4.67	− 0.86	−26.70	. .		. .
26	19	Jupiter I, S. . .	Sk.	50.0	52.4	54.1	. .	. .	. .	10.0	11.7	14.1	16 2.05	− 0.96	. .	−26.92	12 15 34.17	. .
	20	Jupiter II, S. . .	Sk.	. .	. .	. .	2.0	. .	6.0	8.1	. .	. .	16 3.99	− 0.96	. .	−26.92	12 15 36.11	. .
	21	12 Canum Venat. .	Sk.	. .	. .	33.5	36.2	38.9	41.6	46.8	48.8	52.0	50 36.25	− 0.82	−26.93	−26.93	12 50 8.50	0.00
	22	Venus I, N. . .	Sk.	8.2	10.9	12.3	18.6	20.6	22.6	28.8	30.3	33.0	2 20.59	− 0.98	. .	−26.94	13 1 52.67	+ 0.63
	23	Polaris, S. P. . .	Sk.	. .	. .	27.0	58.0	22.0	9.0	42.0	52.0	50.0	13 34.67	− 3.98	. .	−26.94	1 13 3.75	− 0.53
27	24	XVIII, 2 . . .	Sk.	58.7	1.9	3.7	10.7	13.3	15.6	22.6	24.5	27.5	5 13.17	− 1.06	. .	−27.86	18 4 44.15	− 2.69
	25	XVIII, 8 . . .	Sk.	53.5	56.6	59.0	6.8	9.8	12.4	20.6	22.4	25.6	12 9.63	− 1.15	. .	−27.86	18 11 40.62	− 3.00
	26	XVIII, 10 . . .	Sk.	49.3	52.2	53.9	0.7	3.2	5.5	12.3	14.1	17.0	16 3.13	− 1.04	. .	−27.86	18 15 34.23	− 2.68
	27	B. A. C. 6335 . .	Sk.	28.8	32.7	35.3	45.2	48.5	51.8	1.9	4.2	8.5	29 48.54	− 0.54	. .	−27.87	18 29 20.13	− 1.79
	28	α Lyræ	Sk.	55.1	58.4	0.2	8.2	10.7	13.1	21.1	23.2	26.1	33 10.68	− 0.66	−27.74	−27.87	18 32 42.15	− 0.11
	29	51 Cephei, S. P. . .	Sk.	. .	. .	42.0	0.0	19.0	36.5	55.5	. .	. .	41 18.60	− 5.30	. .	−27.88	6 40 45.42	− 0.12
	30	β Lyræ	Sk.	41.5	44.8	46.5	53.9	56.4	58.8	6.0	7.8	10.8	45 56.28	− 0.69	−27.88	−27.88	18 45 27.71	+ 0.03
	31	ζ Aquilæ. . . .	Sk.	55.6	58.2	59.7	6.0	8.1	10.3	16.6	18.2	20.7	0 8.16	− 0.80	−27.98	−27.88	18 59 39.48	+ 0.18
	32	XIX, 1	Sk.	27.0	30.0	32.0	39.3	41.9	44.4	51.6	53.5	56.4	10 41.79	− 1.09	. .	−27.88	19 10 12.82	− 3.18
	33	XIX, 4	Sk.	. .	. .	. .	. .	14.5	16.7	21.0	22.7	25.6	12 12.17	− 1.01	. .	−27.88	19 11 43.28	− 2.91
	34	B. A. C. 6642 . .	Sk.	. .	. .	9.4	11.5	13.7	15.8	17.8	. .	. .	19 13.64	− 0.79	. .	−27.89	19 18 44.96	− 2.29
	35	B. A. C. 6676 . .	Sk.	58.9	1.7	3.4	10.0	12.4	14.7	21.3	23.1	25.9	24 12.38	− 0.75	. .	−27.89	19 23 43.74	− 2.22
	36	B. A. C. 6730 . .	Sk.	. .	. .	57.4	0.4	3.7	7.0	10.0	. .	. .	33 3.70	− 0.56	. .	−27.89	19 32 35.25	− 2.08
	37	B. A. C. 6734 . .	Sk.	15.5	19.2	21.4	. .	31.1	34.2	37.6	40.7	. .	33 34.29	− 0.56	. .	−27.89	19 33 5.84	− 2.09
	38	B. A. C. 6806 . .	Sk.	15.0	18.4	20.3	28.3	30.9	33.4	41.0	43.0	46.2	45 30.72	− 0.66	. .	−27.90	19 45 2.16	− 2.19
	39	B. A. C. 6813 . .	Sk.	21.1	24.6	26.4	. .	. .	. .	47.1	49.1	52.4	46 36.78	− 0.66	. .	−27.90	19 46 8.22	− 2.19
	40	B. A. C. 6879 . .	Sk.	12.0	14.7	16.5	23.4	25.7	28.1	34.9	36.5	39.5	56 25.70	− 0.73	. .	−27.91	19 55 57.06	− 2.31
	41	B. A. C. 6912 . .	Sk.	46.1	49.1	50.8	. .	. .	. .	8.5	10.0	13.0	1 59.58	− 0.75	. .	−27.91	20 1 30.92	− 2.36
	42	XX, 2	Sk.	53.8	56.7	58.3	4.9	7.2	9.4	16.3	17.9	20.8	11 7.26	− 1.02	. .	−27.91	20 10 38.33	− 3.18
	43	XX, 7	Sk.	2.3	3.9	8.3	10.6	12.7	14.9	17.0	21.4	23.0	22 12.68	− 0.99	. .	−27.91	20 21 43.78	− 3.12
	44	XX, 10	Sk.	59.8	3.0	5.0	13.0	15.7	18.2	26.1	28.0	31.3	27 15.57	− 1.13	. .	−27.92	20 26 46.52	− 3.69
	45	XX, 13	Sk.	42.9	46.3	48.0	55.6	58.0	0.5	7.7	9.7	12.7	32 57.93	− 1.09	. .	−27.92	20 32 28.92	− 3.54
	46	B. A. C. 7193 . .	Sk.	. .	. .	20.8	24.9	29.2	33.0	37.0	. .	. .	40 28.98	− 0.43	. .	−27.92	20 40 0.63	− 2.39
	47	Saturn I, S. . .	Sk.	55.3	58.2	59.8	. .	. .	. .	16.8	18.5	21.2	48 8.32	− 0.98	. .	−27.93	20 47 39.41	. .
	48	Saturn II, N. . .	Sk.	. .	. .	7.0	9.1	11.3	13.5	15.7	. .	. .	48 11.32	− 0.98	. .	−27.93	20 47 42.41	. .
	49	B. A. C. 7377 . .	Sk.	42.3	47.8	50.4	2.4	6.2	10.4	22.6	25.7	30.7	9 6.50	− 0.44	. .	−27.93	21 8 38.13	− 2.50
	50	θ Aquarii (R.) .	Sk.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .

14, 46. Bisections at sets B and D.
23. Wire V in Right Ascension reduced for 33^s.0.
29. Bisections at wires B_3 and B_5.
46. Telescope micrometer reading increased five revolutions in reduction.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	318 8	10 19.7	17.4	8.0	13.1	36	. .	350	. .	290	. .	76.9	41 48 36.9	. .	+ 49.5	92 55 47.6	+ 0.4
2	13 4	12.6	10.7	3.9	5.0	35	978	935	. .	. .	.	76.9	346 52 25.2	. .	− 12.9	37 58 33.5	+ 8.5
3	359 42	12.6	10.4	3.3	8.7	32	. .	100	. .	100	. .	76.9	0 13 26.8	. .	+ 0.2	51 19 48.2	− 0.8
4	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
5	354 16	16.5	13.0	5.5	8.4	35	. .	. .	. .	560	580	76.9	5 40 22.5	. .	+ 5.5	56 46 49.2	− 0.2
6	14 14	13.3	11.0	4.0	6.5	32	. .	252	. .	252	. .	76.9	345 41 29.2	. .	− 14.2	36 47 36.2	+ 8.5
7	10 38	17.2	15.7	9.3	10.1	27	. .	. .	. .	975	. .	76.9	349 16 28.4	. .	− 10.5	40 22 39.1	+ 8.4
8	10 38	17.2	15.7	9.3	10.1	27	. .	. .	. .	. .	530	76.9	349 16 22.2	. .	− 10.5	40 22 32.9	+ 8.4
9	337 44	16.5	13.4	4.0	8.8	32	. .	332	. .	240	. .	76.9	22 11 31.4	. .	+ 22.7	73 18 15.3	+ 5.3
10	13 6	12.8	8.9	2.8	4.5	33	. .	. .	. .	790	738	76.9	346 49 51.5	. .	− 13.0	37 55 59.7	+ 8.5
11	3 10	5.8	3.4	25.4	28.1	32	. .	. .	. .	100	090	76.9	356 45 19.2	. .	− 3.2	47 51 37.2	+ 8.1
12	331 22	9.2	6.7	29.5	3.1	36	. .	835	. .	810	. .	76.9	28 34 34.8	. .	+ 30.3	79 41 26.3	0.0
13	329 36	15.3	12.1	5.3	8.6	37	. .	210	. .	180	. .	76.9	30 20 46.2	. .	+ 32.6	81 27 40.0	− 0.5
14	141 30	15.2	7.0	0.0	1.7	33	070	. .	055	. .	062	76.9	218 25 38.2	. .	+ 44.2	12 39 58.8	− 4.2
15	207 56	15.3	12.3	5.4	6.0	32	400	340	330	300	325	76.9	151 59 31.1	75.0	− 29.7	79 7 19.8	+ 2.6
16	174 0	7.5	2.8	24.5	28.3	35	. .	. .	. .	980	020	76.9	185 56 18.1	. .	+ 5.8	45 9 57.3	− 2.9
17	326 36	12.8	10.9	4.0	9.5	34	. .	255	. .	213	. . .	81.0	33 20 3.8	. .	+ 37.3	84 27 2.3	− 2.8
18	349 22	5.1	3.5	26.3	1.3	33	. .	. .	. .	163	165	81.0	10 33 40.3	68.2	+ 10.6	61 40 12.1	− 0.3
19	320 36	9 28.4	27.5	25.6	29.6	35	892	888	. .	. .	. .	81.0	39 20 17.3	. .	+ 45.8	90 27 24.3	. .
20	320 36	9 28.4	27.5	25.6	29.6	34	. .	. .	. .	060	170	81.0	39 19 50.8	. .	+ 45.8	90 26 57.8	. .
21	0 2	28.4	29.5	26.0	25.7	33	. .	. .	. .	570	500	81.0	359 53 42.0	. .	− 0.1	51 0 3.1	+ 2.9
22	313 42	27.5	22.3	23.5	26.0	36	080	080	. .	. .	. .	81.0	46 14 17.8	. .	+ 58.2	97 21 37.2	. .
23	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
24	290 6	10 9.7	5.1	27.1	2.6	33	159	058	. .	. .	. .	83.3	69 49 42.5	60.0	+ 2 35.0	120 58 38.7	− 10.4
25	280 48	17.9	13.7	9.0	10.7	34	888	773	. .	. .	. .	83.3	79 8 17.9	. .	+ 4 50.5	130 19 29.6	− 12.9
26	293 30	9 29.6	25.2	25.5	26.0	32	218	170	. .	. .	. .	83.3	66 25 21.5	. .	+ 2 10.9	117 33 53.6	− 8.7
27	13 4	10 3.5	2.4	24.5	28.5	36	099	136	. .	. .	. .	83.3	346 52 25.7	. .	− 13.4	37 58 33.5	+ 9.9
28	359 42	3.6	2.0	24.6	28.6	32	340	528	. .	. .	. .	83.3	0 13 29.0	. .	+ 0.2	51 19 50.4	+ 2.8
29	53 46	4.0	0.4	23.6	26.7	30	640	645	. .	. .	. .	83.3	306 8 59.4	. .	− 1 18.5	357 14 2.1	+ 2.3
30	354 16	7.2	3.9	27.4	1.7	35	. .	810	. .	720	. .	83.3	5 40 23.0	. .	+ 5.7	56 46 49.9	+ 1.9
31	334 44	8.6	5.4	26.7	2.6	36	080	970	. .	. .	. .	83.3	25 12 26.7	. .	+ 27.1	76 19 15.0	+ 1.0
32	257 44	6.8	2.5	24.0	29.7	39	602	637	. .	. .	. .	83.3	72 13 19.3	. .	+ 2 57.8	123 22 38.3	− 6.2
33	297 18	12.8	8.4	2.4	7.1	37	. .	. .	. .	560	650	83.3	62 38 56.2	. .	+ 1 50.9	113 47 8.3	− 3.5
34	337 44	4.8	2.1	24.5	1.1	32	. .	. .	. .	610	555	83.3	22 11 32.6	. .	+ 23.5	73 18 17.3	+ 6.3
35	345 34	4.9	28.5	23.5	29.6	37	082	121	. .	. .	. .	83.3	14 22 39.7	. .	+ 14.8	65 29 15.7	+ 7.8
36	10 58	11.8	7.1	3.6	5.1	27	. .	475	. .	448	. .	83.3	348 56 20.4	. .	− 11.3	40 2 30.3	+ 10.4
37	10 58	11.8	7.1	3.6	5.1	33	. .	. .	. .	265	170	83.3	348 57 49.1	. .	− 11.3	40 3 59.0	+ 10.3
38	359 26	7.8	3.4	27.7	0.8	33	542	485	. .	. .	. .	83.3	0 29 48.2	. .	+ 0.5	51 36 9.9	+ 9.8
39	359 26	7.8	3.4	27.7	0.8	32	. .	. .	. .	843	840	83.3	0 29 38.7	. .	+ 0.5	51 36 0.4	+ 9.8
40	348 28	11.0	6.5	27.9	5.0	37	785	770	. .	. .	. .	83.3	11 28 56.0	. .	+ 11.7	62 35 28.9	+ 9.0
41	344 18	9.1	3.6	26.0	1.7	34	810	778	. .	. .	. .	83.3	15 38 7.8	. .	+ 16.2	66 44 45.2	+ 8.7
42	296 18	7.8	2.6	28.1	3.8	31	268	169	. .	. .	. .	83.3	63 37 13.1	. .	+ 1 56.1	114 45 30.4	+ 1.2
43	299 44	8.0	3.7	26.0	1.4	30	156	150	. .	. .	. .	83.3	60 10 56.0	. .	+ 1 40.7	111 18 57.9	+ 2.8
44	282 34	10.1	5.8	28.5	4.4	28	728	600	. .	. .	. .	83.3	77 20 35.4	. .	+ 4 12.2	128 31 8.8	0.0
45	287 14	10.4	6.5	29.0	3.8	38	. .	. .	. .	418	433	83.3	72 43 5.8	. .	+ 3 4.1	123 52 31.1	+ 1.4
46	21 12	6.7	3.4	28.9	1.5	33	. .	. .	. .	205	145	83.3	338 45 0.0	. .	− 22.6	29 50 58.6	+ 10.2
47	302 14	7.3	1.6	25.5	0.4	34	670	630	. .	. .	. .	83.3	57 42 3.8	55.0	+ 1 31.5	108 49 56.5	. .
48	302 14	7.3	1.6	25.5	0.4	33	. .	. .	. .	238	182	83.3	57 41 42.5	. .	+ 1 31.5	108 49 35.2	. .
49	20 30	9 27.1	22.7	17.4	20.4	33	898	860	. .	. .	. .	83.3	339 25 43.8	. .	− 21 8	30 31 43.2	+ 10.2
50	227 14	10 7.0	2.0	27.2	29.4	38	540	520	. .	. .	. .	83.3	132 43 3.7	. .	− 1 2.9	98 24 20.4	− 1.9

No.	Barom.	At. Ther.
	in.	°
16	30.22	78.6
18	30.29	64.5
24	30.18	65.0
47	30.17	59.8

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
19	− 0.9	− 13.2	. .	− 14.1
20	− 0.9	+ 13.2	. .	+ 12.3
22	− 5.5	+ 9.2	. .	+ 3.7
47	− 0.8	− 10.6	. .	− 11.4
48	− 0.8	+ 10.6	. .	+ 9.8

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Aug. 27	1	η Aquarii (R.)	Sk	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .
	2	α Piscis Australis	Sk.	59.4	2.3	4.1	11.3	13.7	16.0	23.1	24.8	27.8	51 13.61	— 1.06	—28.00	—27.98	22 50 44.57	+ 0.06
	3	α Pegasi	Sk.	47.9	50.6	52.1	58.5	0.6	2.8	9.0	10.5	13.2	59 0.58	— 0.80	—27.97	—27.98	22 58 31.80	+ 0.02
	4	Moon II	Sk.	21.9	24.5	26.0	32.4	34.6	36.6	43.0	44.6	47.3	8 34.54	— 0.92	. .	—27.98	23 8 5.64	—69.41
31	5	I, 6	Sk.	. .	. .	16.9	19.1	21.4	23.7	26.2	. .	. .	50 21.46	— 1.12	. .	—29.81	1 49 50.53	— 2.60
	6	I, 9^1	Sk.	. .	29.8	31.4	. .	. .	. .	49.4	51.0	. .	53 40.41	— 1.07	. .	—29.81	1 53 9.53	— 2.53
	7	I, 9^2	Sk.	. .	. .	36.5	38.7	. .	43.2	45.5	. .	. .	53 40.96	— 1.07	. .	—29.81	1 53 10.08	— 2.53
	8	α Arietis	Sk.	24.0	26.8	28.4	35.0	37.3	39.5	46.3	47.8	50.7	0 37.31	— 0.75	—29.75	—29.81	2 0 6.75	— 0.05
	9	γ Ceti	Sk.	6.9	9.6	11.0	17.2	19.3	21.3	27.4	28.8	31.6	37 19.23	— 0.88	—29.79	—29.82	2 36 48.55	— 0.03
	10	Moon II	Sk.	22.0	24.8	26.5	33.1	35.3	37.5	44.0	45.9	48.7	49 35.31	— 0.84	. .	—29.82	2 49 4.65	—71.16
	11	α Ceti	Sk.	2.1	4.7	6.2	12.4	14.4	16.5	22.6	24.1	26.8	56 14.42	— 0.88	—29.77	—29.82	2 55 43.72	— 0.03
	12	η Tauri	Sk.	18.9	21.8	23.5	30.1	32.4	34.7	41.2	43.0	45.7	40 32.37	— 0.75	—29.82	—29.83	3 40 1.79	— 0.01
	13	ζ Persei	Sk.	31.0	34.0	35.8	43.0	45.5	48.0	54.9	56.8	59.8	46 45.42	— 0.69	—29.81	—29.83	3 46 14.90	— 0.03
	14	γ^1 Eridani	Sk.	29.0	31.6	33.3	39.6	41.6	43.8	50.0	51.7	54.3	52 41.66	— 1.00	—29.82	—29.83	3 52 10.83	+ 0.03
	15	B. A. C. 1247	Sk.	. .	. .	12.0	29.3	48.1	5.5	24.1	. .	. .	59 47.80	+ 1.58	. .	—29.83	3 59 19.55	— 5.77
	16	ε Tauri	Sk.	35.2	37.9	39.4	45.9	48.0	50.2	56.7	58.3	1.1	21 48.08	— 0.78	—29.90	—29.84	4 21 17.46	+ 0.05
	17	α Tauri	Sk.	1.2	3.9	5.4	11.7	13.9	16.0	22.3	24.0	26.6	29 13.89	— 0 80	—29.85	—29.84	4 28 43.25	— 0.01
	18	ι Aurigæ	Sk.	5.2	8.2	10.0	17.4	19.7	22.2	29.4	31.3	34.3	49 19.74	— 0.68	—29.92	—29.84	4 48 49.22	+ 0.04
Sept. 9	19	B. A. C. 6623	F.	24.8	29.3	32.1	42.1	45.6	48.9	59.2	1.8	5.9	14 45.52	— 0.70	. .	—31.77	19 14 13.05	— 1.63
	20	δ Aquilæ	F.	31.4	34.1	35.6	41.6	43.7	45.7	51.9	53.5	56.0	19 43.71	— 0.86	—31.82	—31.77	19 19 11.08	+ 0.10
	21	B. A. C. 6698	F.	25.2	28.2	30.1	37.5	40.1	42.4	49.8	51.6	54.7	27 39.96	— 0.77	. .	—31.78	19 27 7.41	— 1.94
	22	B. A. C. 6730	F.	. .	. .	. .	7.5	10.9	14.1	20.6	22.8	26.7	33 7.72	— 0.72	. .	—31.78	19 32 35.22	— 1.78
	23	B. A. C. 6734	F.	. .	31.7	34.9	38.1	41.3	44.4	51.8	53.4	57.3	33 38.14	— 0.72	. .	—31.78	19 33 5.64	— 1.78
	24	γ Aquilæ	F.	38.7	41.3	42.8	49.1	51.2	53.2	59.4	1.1	3.6	40 51.16	— 0.84	—31.85	—31.78	19 40 18.54	+ 0.10
	25	α Aquilæ	F.	. .	9.1	11.1	13.1	15.2	17.2	21.4	23.0	25.5	45 13.14	— 0.85	—31.78	—31.78	19 44 40.51	+ 0.04
	26	λ Ursæ Minoris	F.	. .	. .	. .	51.0	41.0	31.5	23.0	. .	. .	50 41.70	+ 3.04	. .	—31.78	19 50 12.96	— 2.92
	27	XX, 7	F.	3.3	6.1	7.7	14.1	16.4	18.5	25.0	26.6	29.4	22 16.34	— 0.95	. .	—31 79	20 21 43.60	— 3.04
	28	B. A. C. 7121	F.	. .	. .	9.3	11.3	13.4	15.6	17.7	. .	. .	32 13.46	— 0.83	. .	—31.79	20 31 40.84	— 2.46
	29	α Cygni	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	30	XX, 16	F.	23.8	26.5	28.3	35.2	37.5	39.9	46.8	48.5	51.3	44 37.53	— 0.99	. .	—31.79	20 44 4.75	— 3.32
	31	B. A. C. 7253	F.	. .	. .	. .	. .	25.1	27.8	33.7	35.7	39.3	49 22.25	— 0.74	. .	—31.79	20 48 49.72	— 2.22
	32	α Cephei	F.	. .	. .	0.5	4.7	9.6	13.5	17.7	. .	. .	16 9.22	— 0.66	. .	—31.79	21 15 36.77	+ 0.15
	33	XXI, 9	F.	26.0	28.7	30.4	37.2	39.4	41.6	48.5	50.0	52.8	28 39.40	— 0.96	. .	—31.80	21 28 6.64	— 3.31
	34	B. A. C. 7512	F.	. .	. .	. .	. .	. .	. .	55.1	57.3	1.4	30 41.94	— 0.71	. .	—31.80	21 30 9.43	— 2.38
	35	π Aquarii (R.)	F.	13.0	15.8	17.2	23.4	25.5	27.4	33.5	35.2	37.9	19 25.43	— 0.12	. .	—31.80	22 18 53.51	+ 0.14
	36	XXII, 8	F.	2.5	5.6	7.4	14.3	16.5	18.9	26.0	27.7	30.6	31 16.61	— 0.99	. .	—31.81	22 30 43.81	— 3.54
	37	ζ Pegasi	F.	33.7	36.2	37.7	43.9	46.0	48.0	54.3	56.0	58.6	35 46.04	— 0.84	—31.73	—31.81	22 35 13.39	— 0.02
	38	ι Cephei (R.)	F.	15.7	21.9	25.7	40.6	45.5	50.4	5.3	8.5	14.8	45 45.38	+ 1.44	. .	—31.81	22 45 15.01	+ 0.16
	39	α Piscis Australis	F.	. .	. .	. .	. .	19.8	22.1	27.0	28.6	31.5	51 17.40	— 0.99	—31.76	—31.81	22 50 44.60	— 0.01
	40	α Pegasi	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
17	41	α Leonis	F.	2 5	5.2	6.8	13.0	15.2	17.2	23.5	25.1	27.7	2 15.13	— 0.69	—34.10	—34.19	10 1 40.25	— 0.13
	42	γ Leonis	F.	24.1	26.8	28.3	. .	. .	. .	45.7	47.3	50.2	13 37.07	— 0.74	—34.15	—34.19	10 13 2.14	— 0.06
18	43	Sun I, N.	F.	5.6	8.3	9.7	15.8	17.8	19.8	26.0	27.7	30.1	43 17.87	— 0.63	. .	—34.21	11 42 43.03	. .
	44	Sun II, S.	F.	. .	. .	21.8	23.9	25.9	27.9	30.0	. .	. .	45 25.90	— 0.63	. .	—34.21	11 44 51.06	. .
	45	12 Canum Venat.	F.	. .	33.3	40.9	43.7	46.3	48.8	54.0	56.0	59.2	50 43.55	— 0.91	—34.29	—34.23	12 50 8.41	+ 0.06
	46	Polaris, S. P.	F.	. .	. .	25.0	. .	33.0	. .	40.0	. .	. .	13 33.27	+19.00	. .	—34.23	1 13 18.04	+ 1.36
	47	α Virginis	F.	56.1	59.2	0.5	6.7	8.7	11.0	17.0	18.7	21.1	19 8.78	— 0.56	—34 29	—34.23	13 18 33.99	+ 0.04
	48	η Ursæ Majoris	F.	50.9	55.0	57.3	7.0	10.0	13.2	22.7	25.1	29.0	43 10.02	— 1.07	. .	—34.24	13 42 34.71	— 0.03

6, 7. The micrometer readings have been interchanged in the reductions; wire B used.
15. Bisections at sets B and D.
22. Micrometer record ambiguous; reduced for $28^r.380$.
38. Telescope micrometer reading decreased five revolutions in reduction.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	219 34	10 6.2	28.5	26.0	27.6	32	258	232	. .	. .	. .	83.3	140 21 25.6	. .	− 48.2	90 45 43.8	− 0.7
2	290 48	10.1	5.3	29.7	5.4	35	015	980	. .	. .	. .	83.3	69 8 12.9	. .	+ 2 31.5	120 17 5.6	− 0.4
3	335 34	4.3	0.0	24.0	0.7	31	840	800	. .	. .	. .	83.3	24 21 19.4	. .	+ 26.3	75 28 6.9	+ 0.6
4	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		52.8	. .		. .
5	292 44	1.0	23.9	1.6	1.5	29	. .	548	. .	. .	. .	79.6	67 10 40.4	. .	+ 2 15.8	118 19 17.4	+26.8
6	297 34	7.0	3.8	26.3	1 3	30	088	. .	. .	. .	. .	79.6	62 23 21.6	. .	+ 1 49.6	113 31 32.4	+26.0
7	297 34	7.0	3.8	26.3	1.3	29	. .	878	. .	. .	. .	79.6	62 23 24.9	. .	+ 1 49.6	113 31 35.7	+26.0
8	343 54	7.2	3.8	26.6	1.0	31	. .	218	. .	198	. .	79.6	16 1 9.0	57.8	+ 16.5	67 7 46.7	− 2.4
9	323 46	7.3	3.2	26.0	3.0	35	. .	860	. .	832	. .	79.6	36 10 20.1	. .	+ 42.1	87 17 23.5	− 3.2
10	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
11	324 38	9.5	4.5	29.6	3.0	30	. .	268	. .	240	. .	79.6	35 16 56.3	. .	+ 40.7	86 23 58.2	− 3.5
12	344 46	8.2	4.7	27.2	1.7	35	. .	838	. .	823	. .	79.6	15 10 20.6	. .	+ 15.6	66 16 57.4	− 0.8
13	352 34	9.6	6.0	28.0	2 7	37	. .	922	. .	922	. .	79.6	7 22 53.8	. .	+ 7.5	58 29 22.5	− 1.2
14	307 12	7.9	3.6	27.5	1.0	34	. .	822	. .	834	. .	79.6	52 44 4.6	. .	+ 1 15.5	103 51 41.3	+ 0.6
15	44 32	5.2	29.4	26.5	29.7	38	. .	. .	. .	850	831	79.6	315 25 4.4	. .	− 56.7	6 30 28.9	− 5.3
16	339 56	8.3	5.5	27.6	1.5	30	. .	958	. .	880	. .	79.6	19 59 5.6	. .	+ 20.9	71 5 47.7	− 1.9
17	337 18	10.4	6.5	0.0	8.3	33	. .	372	. .	258	. .	79.6	22 37 45.4	. .	+ 24.0	73 44 30.6	− 0.3
18	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
19	14 10	14.6	9.8	3.1	7.4	32	. .	014	. .	024	. .	79.5	345 45 28.3	. .	− 14.4	36 51 35.1	+12.8
20	323 56	0.8	27.7	19.3	24.8	38	. .	. .	. .	728	736	79.5	36 0 57.9	. .	+ 41.1	87 8 0.2	+ 0.7
21	355 14	13.8	10.0	2.1	6.9	35	. .	005	. .	995	. .	79.5	4 42 13.2	67.8	+ 4.6	55 48 39.0	+11.2
22	10 58	9 28.7	26.0	22.0	24.5	28	. .	. .	. .	. .	880	79.5	348 56 20.0	. .	− 11.0	40 2 30.2	+13.0
23	10 58	28.7	26.0	22.0	24.5	34	. .	. .	. .	136	126	79.5	348 57 47.7	. .	− 11.0	40 3 57.9	+13.0
24	331 22	10 9.0	4.5	27.4	4.0	36	. .	. .	. .	632	606	79.5	28 34 33.7	. .	+ 30.8	79 41 25.7	+ 1.6
25	329 36	12.0	7.7	0.8	6.9	37	. .	. .	. .	062	068	70.5	30 20 43.7	. .	+ 33.1	81 27 38.0	− 0.4
26	49 56	9 29.5	25.1	16.7	22.8	30	. .	. .	646	. .	. .	79.5	309 58 51.6	. .	− 1 7.2	1 4 5.6	− 1.0
27	299 44	10 11.1	6.7	27.5	4.4	30	. .	442	. .	396	. .	79.5	60 10 59.4	69.0	+ 1 38.1	111 18 58.7	+ 2.2
28	335 12	16.0	10.0	3.8	9.8	32	. .	326	. .	332	. .	79.5	24 43 33.8	. .	+ 26.0	75 50 21.0	+10.4
29	5 52	0.0	25.8	19.4	23.7	33	. .	. .	. .	700	618	79.5	354 3 39.8	. .	− 6.0	45 9 55.0	+ 0.3
30	292 36	15.8	9.8	3.0	8.5	30	. .	. .	. .	936	956	79.5	67 19 12.0	. .	+ 2 14.4	118 27 47.6	+ 2.5
31	4 56	3.7	29.5	21.8	27.0	30	. .	. .	. .	. .	090	79.5	354 58 48.7	. .	− 5.0	46 5 4.9	+13.9
32	23 6	11.8	9.5	29.7	6.7	36	. .	782	. .	. .	. .	79.5	336 50 39.3	. .	− 24.3	27 56 36.2	− 3.5
33	297 4	11.3	4.5	29.5	5.1	36	. .	270	. .	280	. .	79.5	62 52 29.2	. .	+ 1 50.5	114 0 40.9	+ 7.4
34	12 10	19.5	15.8	10.0	12.2	31	. .	. .	. .	200	196	79.5	347 45 21.9	. .	− 12.3	38 51 30.8	+14.2
35	218 4	10.3	4.9	28 5	0.7	33	. .	. .	. .	128	140	79.5	141 51 40.1	62.2	− 44.9	89 15 26.0	0.0
36	291 22	7.7	1.5	24.3	0.0	30	. .	210	. .	190	. .	79.5	68 32 52.0	. .	+ 2 24 2	119 41 37.4	+12.3
37	331 14	1.5	28.3	21.5	27.3	36	. .	. .	. .	390	372	79.5	28 42 23.5	. .	+ 31.3	79 49 16.0	− 0.5
38	153 16	15.2	11.7	4.8	7.2	32	. .	. .	. .	658	668	79.5	206 38 21.3	. .	+ 28.7	24 27 31.2	− 0.2
39	290 48	14.8	7.6	1.4	7.8	35	. .	. .	. .	240	220	79.5	69 8 16.2	61.5	+ 2 29.0	120 17 6.4	− 0.9
40	335 34	6.7	2.1	25.5	2.8	31	. .	. .	. .	772	762	79.5	24 21 17.5	. .	+ 25.9	75 28 4.6	+ 1.5
41	333 38	10.7	8.2	0.5	6.4	35	. .	200	. .	180	. .	76.4	26 18 11.1	76.0	+ 27.5	77 24 59.8	− 2.6
42	341 32	4.3	6.1	24.8	2.2	37	. .	316	. .	304	. .	76.4	18 24 39.0	. .	+ 18.5	69 31 18.7	− 0.2
43	323 4	4.3	6.1	26.8	1.3	33	284	304	. .	. .	. .	76.4	36 51 37.8	. .	+ 41.3	87 58 40.3	. .
44	322 32	9 28.8	1.5	23.7	29.3	33	. .	. .	. .	304	344	76.4	37 23 34.2	80.2	+ 42.1	88 30 37.5	. .
45	0 2	10 4.1	4.2	27.2	0.7	33	. .	. .	. .	824	740	76.4	359 53 45.4	. .	− 0.1	51 0 6.5	+ 1.5
46	52 22	9 29.8	29.9	21.9	25.8	31	776	. .	770	. .	750	76.4	307 33 8.9	. .	− 1 11.4	358 38 18.7	− 2.3
47	310 34	10 3.2	5.7	27.7	3.3	37	. .	928	. .	962	. .	76.4	49 22 49.2	. .	+ 1 4.1	100 30 14.5	− 2.1
48	10 58	0.1	28.8	23.3	26.9	32	. .	292	. .	278	. .	76.4	348 57 17.8	. .	− 10.7	40 3 28.3	+ 1.0

No.	Barom.	At. Ther.
	in.	°
1	30.15	58.0
2	30.12	61.8
21	30.16	72.0
27	30.17	72.0
35	30.17	69.0
39	30.17	68.0
43	30.13	71.5
44	30.14	84.8

For summary of the elements of reduction see page 3.

No.	Parallax	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
43	− 5.3	+ 15 58.6	. .	+ 15 53.3
44	− 5.3	− 15 58.6	. .	− 16 3.9

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Sept. 18	1	η Bootis	F.	3.8	6.5	8.0	14.6	16.7	19.0	25.3	27.0	29.7	49 16.73	− 0.73	−34.24	−34.24	13 48 41.76	− 0.05
	2	ζ Aquilæ	F.	1.5	4.2	5.6	12.0	14.0	16.2	22.3	24.0	26.7	0 14.00	− 0.68	−34.33	−34.31	18 59 39.07	+ 0.10
	3	XIX, 2	F.	40.0	42.9	44.4	50.8	53.0	55.1	1.7	3.3	6.0	10 53.02	− 0.49	. .	−34.31	19 10 18.22	− 2.52
	4	δ Aquilæ	F.	33.6	36.2	37.7	43.8	45.8	47.9	54.1	55.6	58.1	19 45.87	− 0.61	−34.36	−34.31	19 19 10.95	+ 0.10
	5	B. A. C. 6674 . .	F.	. .	. .	0.3	2.5	4.9	7.4	9.2	. .	. .	24 4.86	− 0.75	. .	−34.31	19 23 29.80	− 1.89
	6	B. A. C. 6676 . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	31.9	24 18.43	− 0.75	. .	−34.31	19 23 43.37	− 1.89
	7	B. A. C. 6714 . .	F.	13.4	16.5	18.2	25.1	27.5	30.0	36.8	38.6	41.6	30 27.52	− 0.79	. .	−34.32	19 29 52.41	− 1.86
	8	B. A. C. 6763[1]. .	F.	45.8	49.9	52.1	58.6	1.7	4.9	. .	. .	. .	39 4.92	− 1.04	. .	−34.32	19 38 29.56	− 1.56
	9	B. A. C. 6763[2]. .	F.	. .	. .	. .	7.7	11.0	14.2	20.5	22.9	26.8	39 7.76	− 1.04	. .	−34.32	19 38 32.40	− 1.56
	10	α Aquilæ . . .	F.	3.0	5.6	7.0	13.3	15.4	17.4	23.6	25.1	27.8	45 15.36	− 0.65	−34.32	−34.32	19 44 40.39	+ 0.04
	11	λ Ursæ Minoris. .	F.	. .	. .	. .	. .	. .	57.0	44.0	. .	. .	51 5.70	−24.01	. .	−34.32	19 50 7.37	+ 1.52
	12	B. A. C. 6962 . .	F.	39.8	43.5	45.7	54.7	57.7	0.7	9.6	11.8	15.3	9 57.64	− 0.98	. .	−34.32	20 9 22.34	− 1.81
	13	XX, 7	F.	5.1	8.0	9.6	16.2	18.4	20.6	27.2	28.7	31.5	22 18.37	− 0.48	. .	−34.33	20 21 43.56	− 2.94
	14	B. A. C. 7164 . .	F.	19.3	22.5	24.3	31.3	33.8	36.3	43.4	45.2	48.5	36 33.84	− 0.82	. .	−34.33	20 35 58.69	− 2.14
	15	B. A. C. 7204 . .	F.	. .	. .	. .	. .	46.6	49.0	54.0	55.8	58.9	41 44.16	− 0.83	. .	−34.33	20 41 9.00	− 2.15
	16	Saturn I, N. . .	F.	. .	. .	. .	. .	39.8	42.0	44.1	. .	. .	43 39.80	− 0.49	. .	−34.33	20 43 4.98	. .
	17	Saturn II, S. . .	F.	. .	. .	. .	. .	. .	. .	49.9	51.5	54.0	43 41.17	− 0.49	. .	−34.33	20 43 6.35	. .
	18	B. A. C. 7253 . .	F.	. .	. .	. .	. .	. .	. .	36.2	38.4	41.8	49 24.88	− 0.95	. .	−34.33	20 48 49.60	− 2.07
	19	σ^2 Ursæ Majoris, S. P.	F.	. .	. .	2.5	57.0	51.7	46.4	40.7	. .	. .	59 51.66	+ 0.61	. .	−34.33	8 59 17.94	− 0.23
	20	B. A. C. 7377 . .	F.	49.4	57.6	5.6	9.4	13.7	17.7	21.6	29.7	37.7	9 13.60	− 1.25	. .	−34.34	21 8 38.01	− 2.07
	21	α Aquarii (R.) . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	22	π Aquarii (R.) . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	23	η Aquarii (R.) . .	F.	17.6	20.2	21.7	27.7	29.8	31.8	37.9	39.4	42.0	29 29.79	+ 0.28	. .	−34.35	22 28 55.72	− 0.05
	24	ζ Pegasi	F	38.7	42.0	44.3	46.4	48.5	50.6	52.7	54.8	58.3	35 48.48	− 0.65	−34.36	−34.36	22 35 13.47	+ 0.06
	25	ι Cephei (R.) . .	F.	. .	. .	38.2	42.9	47.9	52.8	57.4	. .	. .	45 47.84	+ 0.98	. .	−34.36	22 45 14.46	− 0.33
	26	α Piscis Australis .	F.	5.2	8.3	10.0	17.1	19.5	21.8	28.8	30.7	33.7	51 19.46	− 0.43	−34.35	−34.36	22 50 44.67	+ 0.03
	27	B. A. C. 8023 . .	F.	32.6	34.6	40.3	42.8	45.5	51.[illegible]	58.6	2.0	. .	56 45.60	− 0.92	. .	−34.36	22 56 10.32	− 2.54
	28	α Pegasi	F.	54.1	56.9	58.5	4.9	7.0	9.1	15.5	17.0	19.6	59 6.96	− 0.68	−34.34	−34.36	22 58 31.92	+ 0.01
20	29	ε Leonis	E.	5.5	8.1	9.9	16.6	18.9	21.1	27.8	29.6	32.4	39 18.88	− 0.83	−35.32	−35.32	9 38 42. 3	− 0.06
	30	α Leonis	E.	3.9	6.5	8.2	14.4	16.5	18.6	24.9	26.4	29.1	2 16.50	− 0.76	−35.35	−35.32	10 1 40.42	− 0.01
	31	γ Leonis	E.	25.2	28.0	29.6	36.3	38.4	40.6	47.1	48.8	51.6	13 38.40	− 0.81	−35.36	−35.33	10 13 2.26	+ 0.01
	32	α Ursæ Majoris . .	E.	7.0	12.5	15.7	29.0	33.5	37.8	51.1	54.4	0.0	56 33.44	− 1.35	. .	−35.34	10 55 56.75	+ 0.12
	33	δ Leonis	E.	48.0	50.9	52.6	59.0	1.1	3 4	9.9	11.6	14.4	8 1.21	− 0.81	−35.38	−35.35	11 7 25.05	− 0.03
21	34	Sun I, N. . . .	E.	53.0	55.7	57.3	3.4	5.4	7.4	13.5	15.0	17.8	54 5.39	− 0.69	. .	−35.36	11 53 29.34	. .
	35	Sun II, S. . . .	E.	3.8	5.4	9.4	11.5	13.5	15.6	17.6	21.7	23.3	56 13.53	− 0.69	. .	−35.36	11 55 37.48	. .
	36	12 Canum Venat. .	E.	28.9	32.2	34.4	42.0	44.7	47.4	55.1	57.2	0.4	50 44.70	− 0.95	−35.40	−35.38	12 50 8.37	+ 0.02
	37	Polaris, S. P. . .	E.	. .	. .	31.5	4.0	38.0	11.5	45.5	. .	. .	13 38.10	+15.51	. .	−35.39	1 13 18.22	+ 0.52
	38	α Virginis . . .	E.	57.4	0.2	1.5	7.8	9.8	11.8	18.3	20.0	22.5	19 9.92	− 0.64	−35.36	−35.39	13 18 33.89	− 0.05
	39	α Bootis	E.	18.5	21.3	23.0	29.5	31.6	33.8	40.2	41.9	44.7	10 31.61	− 0.80	−35.33	−35.41	14 9 55.40	− 0.08
	40	ε Bootis	E.	52.0	55.0	56.8	3.6	5.9	8.3	15.0	16.9	19.7	40 5.91	− 0.85	−35.34	−35.42	14 39 29.64	− 0.10
	41	α^2 Libræ	E.	. .	. .	. .	31.6	33.6	35.7	40.0	41.8	44.0	44 31.51	− 0.61	−35.50	−35.42	14 43 55.48	+ 0.07
	42	Venus I, N. . .	E.	6.0	8.6	10.3	16.8	18.9	21.2	27.7	29.3	31.9	47 18.97	− 0.60	. .	−35.42	14 46 42.95	+ 0.84
	43	B. A. C. 6551 . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	44	XIX, 2	E.	41.3	44.1	45.8	52.2	54.3	56.5	2.8	4.5	7.3	10 54.31	− 0.57	. .	−35.50	19 10 18.24	− 2.47
	45	δ Aquilæ	E.	. .	. .	42.9	45.0	47.1	49.2	51.3	. .	. .	19 47.10	− 0.68	−35.56	−35.50	19 19 10.92	+ 0.11
	46	B. A. C. 6687 . .	E	38.7	43.0	45.4	55.4	58.6	2.0	12.0	14.4	18.6	24 58.68	− 1.08	. .	−35.51	19 24 22.09	− 1.34
	47	B. A. C. 6712 . .	E.	17.0	22.0	24.8	36.6	40.5	44.4	55.9	59.0	4.0	29 40.47	− 1.20	. .	−35.51	19 29 3.76	− 1.20
	48	B. A. C. 6731 . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	49	B. A. C. 6763[1]. .	E.	46.7	51.0	53.3	. .	. .	. .	19.3	21.3	25.3	39 6.15	− 1.04	. .	−35.51	19 38 29.60	− 1.47

8, 9. These micrometer records are probably interchanged.
8. Reduced for 32r.814, and bisections at wires I and VII.
9. Reduced for 34r.590, and bisections at wires II and VI.
10, 25. Bisections at sets B and D.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	340 4	9 29.8	0.3	21.1	26.6	33	. .	232	. .	266	. .	76.4	19 51 31.9	81.7	+ 19.9	70 58 13.0	− 0.5
2	334 44	10 8.2	6.2	27.0	2.5	36	. .	424	. .	430	. .	75.7	25 12 26.3	. .	+ 26.3	76 19 13.8	+ 1.4
3	301 54	10.6	8.8	29.7	4.2	37	. .	120	. .	140	. .	75.7	58 2 39.2	. .	+ 1 29.6	109 10 30.0	− 2.9
4	323 56	14.1	10.8	1.5	6.7	38	. .	080	. .	070	. .	75.7	36 0 56.3	71.6	+ 40.8	87 7 58.3	− 0.9
5	345 28	19.4	15.0	9.7	12.0	36	. .	. .	052	. .	. .	75.7	14 28 31.1	. .	+ 14.5	65 35 6.8	+10.3
6	345 34	11.3	4.6	26.0	0.7	37	. .	. .	. .	088	088	75.7	14 22 36.6	. .	+ 14.4	65 29 12.2	+10.4
7	350 14	12.4	10.5	2.0	5.5	34	. .	616	. .	668	. .	75.7	9 42 3.2	. .	+ 9.6	60 48 34.0	+11.6
8	11 16	10.0	8.0	1.0	2.9	34	. .	630	. .	550	. .	75.7	348 39 33.8	. .	− 11.3	39 45 43.7	+14.6
9	11 16	10.0	8.0	1.0	2.9	33	810	. .	. .	. .	818	75.7	348 40 0.5	. .	− 11.3	39 46 10.4	+14.6
10	329 36	14.2	12.2	1.4	6.2	37	170	. .	. .	. .	162	75.7	30 20 42.6	. .	+ 32.9	81 27 36.7	− 0.1
11	49 56	11.7	6.2	28.7	7.2	29	. .	. .	. .	920	922	75.7	309 58 49.4	. .	− 1 7.0	1 4 3.6	− 1.0
12	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
13	299 44	10.9	6.0	27.0	3.5	30	. .	750	. .	740	. .	75.7	60 11 0.0	68.5	+ 1 38.2	111 18 59.4	+ 1.8
14	352 54	12.7	8.0	0.2	3.8	33	. .	114	. .	118	. .	75.7	7 1 38.5	. .	+ 7.0	58 8 6.7	+14.4
15	354 32	9.9	8.2	27.0	1.9	32	. .	. .	. .	046	040	75.7	5 23 20.6	. .	+ 5.3	56 29 47.1	+14.8
16	301 56	3.6	1.1	19.9	27.0	35	. .	. .	. .	008	. .	75.7	57 59 59.1	. .	+ 1 30.1	109 7 50.4	. .
17	301 56	3.6	1.1	19.9	27.0	36	. .	. .	. .	. .	150	75.7	58 0 16.7	. .	+ 1 30.1	109 8 8.0	. .
18	4 56	2.4	0.0	20.4	24.2	30	. .	254	. .	206	. .	75.7	354 58 45.0	. .	− 5.0	46 5 1.2	+15.9
19	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		68.1	. .		. .
20	20 30	6.0	3.0	25.0	28.5	33	. .	640	. .	640	. .	75.7	339 25 41.3	. .	− 21.2	30 31 41.3	+16.5
21	213 44	9.4	5.2	29.4	29.0	32	. .	. .	. .	. .	636	75.7	140 11 28.4	. .	− 47.1	90 55 39.9	+ 1.9
22	218 4	11.6	7.5	0.5	1.8	33	. .	186	. .	192	. .	75.7	141 51 38.5	. .	− 44.4	89 15 27.1	+ 1.7
23	219 34	11.0	6.8	0.0	1.5	32	. .	220	. .	224	. .	75.7	140 21 23.2	. .	− 46.9	90 45 44.9	+ 1.9
24	331 14	9.5	8.0	29.3	3.5	36	. .	066	. .	054	. .	75.7	28 42 22.3	. .	+ 31.0	79 49 14.5	− 1.0
25	153 16	14.5	11.7	3.1	6.1	28	. .	. .	. .	196	200	75.7	206 38 25.6	. .	+ 28.4	24 27 27.2	− 1.6
26	290 48	17.5	14.5	5.2	10.2	35	508	420	. .	. .	. .	75.7	69 8 19.2	66.6	+ 2 27.5	120 17 7.9	− 0.4
27	2 42	6.5	5.5	26.5	0.7	36	. .	. .	424	428	. .	75.7	357 14 25.3	. .	− 2.7	48 20 43.8	+20.1
28	335 34	5.0	4.4	24.5	0.5	31	. .	. .	. .	870	862	75.7	24 21 14.5	. .	+ 25.7	75 28 1.4	− 0.4
29	345 24	2.0	29.6	23.2	27.7	35	. .	765	. .	760	. .	76.5	14 32 11.7	64.5	+ 14.8	65 38 47.7	− 0.9
30	333 38	15.9	14.8	7.8	9.8	34	. .	935	. .	925	. .	76.5	26 18 12.8	. .	+ 28.2	77 25 2.2	− 0.5
31	341 32	3.8	2.8	26.4	28.8	37	. .	470	. .	370	. .	76.5	18 24 39.4	. .	+ 19.0	69 31 19.6	+ 0.2
32	23 28	14.0	13.0	7.6	8.2	35	. .	540	. .	450	. .	76.5	336 28 20.7	. .	− 24.8	27 34 17.1	− 1.9
33	342 16	7.8	7.6	1.1	3.8	36	. .	800	. .	780	. .	76.5	17 40 34.4	67.0	+ 18.1	68 47 13.7	+ 1.0
34	321 54	9 24.3	23.2	15.4	21.8	33	670	640	. .	. .	. .	76.5	38 1 32.5	. .	+ 44.3	89 8 38.0	. .
35	321 22	16.5	14.8	5.7	13.4	34	. .	. .	. .	265	240	76.5	38 33 32.8	68.0	+ 45.2	89 40 39.2	. .
36	0 2	10 3.5	4.0	28.2	0.4	33	. .	845	. .	815	. .	76.5	359 53 45.6	. .	− 0.1	51 0 6.7	+ 0.9
37	52 22	5.7	4.8	0.5	1.5	31	675	. .	635	. .	680	76.5	307 33 13.5	. .	− 1 13.4	358 38 21.3	− 0.9
38	310 34	3.7	4.1	26.7	1.8	37	. .	940	. .	865	. .	76.5	49 22 47.7	. .	+ 1 5.8	100 30 14.7	− 1.8
39	340 54	6.1	5.6	0.2	2.5	38	. .	745	. .	695	. .	76.5	19 3 2.4	. .	+ 19.5	70 9 43.1	+ 1.7
40	348 38	13.6	11.2	5.9	6.4	30	. .	725	. .	720	. .	76.5	11 17 5.7	. .	+ 11.3	62 23 38.2	+ 1.0
41	3 5 32	2.0	2.0	26.6	0.1	32	. .	. .	. .	950	900	76.5	54 23 30.4	. .	+ 1 18.5	105 31 10.1	+ 1.0
42	302 2	4.2	4.6	28.6	0.7	38	495	510	. .	465	460	76.5	57 54 56.9	70.5	+ 1 29.6	109 2 47.7	. .
43	14 14	13.8	11.5	5.6	5.8	31	. .	. .	. .	840	830	75.9	345 41 22.6	. .	− 14.7	36 47 29.1	+13.9
44	301 54	10.0	7.3	29.8	3.2	37	. .	070	. .	030	. .	75.9	58 2 37.5	. .	+ 1 32.1	109 10 30.8	− 3.0
45	323 56	15.7	12.5	5.0	6.5	37	. .	810	. .	760	. .	75.9	36 0 53.7	59.0	+ 41.9	87 7 56.8	− 2.3
46	13 6	14.8	10.7	5.3	7.6	33	. .	210	. .	200	. .	75.9	346 49 43.6	59.0	− 13.5	37 55 51.3	+14.7
47	19 22	7.8	5.6	0.5	1.0	34	. .	060	. .	045	. .	75.9	340 33 50.8	. .	− 20.3	31 39 51.7	+15.2
48	5 28	18.1	14.0	8.1	7.1	35	. .	925	. .	920	. .	75.9	354 28 27.4	. .	− 5.6	45 34 43.0	+14.3
49	11 16	12.3	9.8	2.7	3.2	32	700	. .	. .	. .	710	75.9	348 39 33.6	. .	− 11.6	39 45 43.2	+15.0

Number.	Barom.	At. Ther.
	in.	°
1	30.13	79.0
2	30.15	74.0
3	30.17	72.0
4	30.17	71.1
5	30.16	70.0
6	30.26	62.0
7	30.26	65.0
8	30.25	66.5
9	30.22	69.0
10	30.22	62.5
11	30.22	62.5

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
16	− 0.8	+ 8.8	. .	+ 8.0
17	− 0.8	− 8.8	. .	− 9.6
34	− 5.5	+ 16 0.6	. .	+ 15 55.1
35	− 5.5	− 16 0.6	. .	− 16 6.1
42	− 10.2	+ 11.7	. .	+ 1.5

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.	
1874.													m. s.	s.	s.	s.	h. m. s.	s.	
Sept. 21	1	B. A. C. 6763[2]. .	E.	. .	. .	2.5	5.6	9.0	12.0	15.2	. .	. .	39 8.86	— 1.04	. .	—35.51	19 38 32.31	— 1.47	
	2	α Aquilæ. . . .	E.	4.1	6.7	8.3	14.5	16.6	18.7	24.8	26.4	29.0	45 16.57	— 0.71	—35.52	—35.51	19 44 40.30	0.00	
	3	β Aquilæ. . . .	E.	33.5	36.1	37.7	43.8	45.9	47.9	54.1	55.7	58.2	49 45.88	— 0.69	—35.51	—35.51	19 49 9.68	+ 0.03	
	4	λ Ursæ Minoris. .	E.	. .	. .	. .	56.0	52.0	39.0	6.0	32.5	52.0	50 57.05	—19.36	. .	—35.52	19 50 2.17	+ 0.33	
	5	B. A. C. 7101 . .	E.	53.0	56.5	58.8	6.8	9.5	12.5	20.3	22.2	25.5	29 9.46	— 0.94	. .	—35.53	20 28 32.99	— 1.94	
	6	B. A. C. 7121 . .	E.	. .	. .	12.8	14.8	17.0	19.1	21.2	. .	. .	32 16.98	— 0.73	. .	—35.53	20 31 40.72	— 2.31	
	7	α Cygni	E.	. .	. .	. .	43.7	46.6	49.5	52.3	. .	. .	37 46.58	— 0.98	—35.45	—35.53	20 37 10.07	— 0.06	
	8	Moon I, S. . .	E.	44.9	47.6	49.5	56.4	58.6	0.9	7.9	9.5	12.4	40 58.63	— 0.54	. .	—35.53	20 40 22.56	+72.44	
	9	ζ Cygni	E.	. .	. .	8.3	10.6	13.0	15.4	17.8	. .	. .	8 13.02	— 0.84	—35.47	—35.54	21 7 36.64	— 0.66	
	10	B. A. C. 7372 . .	E.	47.0	49.5	51.1	57.3	59.4	1.5	7.7	9.2	11.9	8 59.40	— 0.71	. .	—35.54	21 8 23.15	— 2.52	
	11	XXI, 5	E.	54.2	57.1	58.8	5.5	7.6	10.0	16.6	18.2	21.0	20 7.67	— 0.55	. .	—35.53	21 19 31.50	— 3.18	
	12	β Aquarii . . .	E.	22.2	24.8	26.4	32.5	34.5	36.6	42.9	44.3	46.9	25 34.67	— 0.63	—35.59	—35.53	21 24 58.41	+ 0.09	
	13	α Leonis	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. .	. . .	. .
	14	γ^1 Leonis	F.	25.7	28.3	30.0	36.4	38.5	40.8	47.4	49.0	51.8	13 38.66	— 0.74	—35.67	—35.81	10 13 2.11	— 0.16	
	15	α Ursæ Majoris(R.)	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .	
	16	δ Leonis	F.	48.5	51.2	52.8	59.5	1.5	3.7	10.3	12.1	14.6	8 1.58	— 0.74	—35.81	—35.83	11 7 25.01	— 0.08	
	17	β Leonis	F.	2.3	5.1	10.7	12.8	15.0	17.2	19.4	25.2	27.9	43 15.07	— 0.74	—35.85	—35.85	11 42 38.48	— 0.02	
22	18	Sun I.	F.	. .	. .	. .	. .	43.5	45.6	49.6	51.1	53.6	57 41.41	— 0.71	. .	—35.86	11 57 4.84	. .	
	19	Sun II, N. . . .	F.	37.3	39.9	41.3	47.6	49.6	51.6	57.7	59.3	1.9	59 49.58	— 0.71	. .	—35.86	11 59 13.01	. .	
	20	Polaris, S. P. . .	F.	. .	. .	38.0	12.0	45.5	. .	55.5	. .	. .	13 46.25	+ 6.34	. .	—35.90	1 13 16.69	— 1.25	
	21	α Bootis	F.	19.0	21.9	23.5	30.0	32.1	34.3	40.8	42.4	45.2	10 32.13	— 0.74	—35.92	—35.92	14 9 55.47	0.00	
	22	α^2 Libræ	F.	19.5	22.1	23.6	29.9	32.2	34.3	40.6	42.2	44.9	44 32.14	— 0.69	—36.06	—35.94	14 43 55.51	+ 0.11	
	23	XVIII, 23 . . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .	
	24	B. A. C. 6542 . .	F.	48.2	51.2	52.8	59.5	1.8	4.0	10.6	12.4	15 2	2 1.74	— 0.73	. .	—36.07	19 1 24.94	— 1.71	
	25	B. A. C. 6551 . .	F.	. .	. .	. .	. .	. .	. .	57.2	59.6	4.0	2 43.50	— 0.84	. .	—36.07	19 2 6.59	— 1.12	
	26	XIX, 1. . . .	F.	34.2	37.5	39.3	46.6	49.0	51.4	58.9	0.8	3.7	10 49.04	— 0.66	. .	—36.07	19 10 12.31	— 2.79	
	27	XIX, 3	F.	56.2	59.6	0.9	8.0	10.3	12.6	19.6	21.4	24.3	12 10.26	— 0.66	. .	—36.07	19 11 33.53	— 2.69	
	28	δ Aquilæ. . . .	F.	35.4	38.0	39.5	45.6	47.7	49.7	55.9	57.4	0.0	19 47.69	— 0.70	—36.15	—36.07	19 19 10.92	+ 0.13	
	29	B. A. C. 6654 . .	F.	. .	. .	33.4	35.6	37.8	40.0	44.2	45.9	48.5	20 35.58	— 0.72	. .	—36.07	19 19 58.79	— 1.88	
	30	B. A. C. 6721 . .	F	29.1	31.3	37.2	40.3	43.4	46.4	49.4	55.6	57.9	31 43.40	— 0.81	. .	—36.08	19 31 6.51	— 1.44	
	31	B. A. C. 6734 . .	F.	23.0	27.2	29.6	39.0	42.2	45.4	54.9	57.3	1.1	33 42.19	— 0.82	. .	—36.08	19 33 5.29	— 1.41	
	32	γ Aquilæ. . . .	F.	42.7	45.2	46.6	52.9	55.0	57.1	3.4	4.9	7.5	40 55.03	— 0.71	—36.03	—36.08	19 40 18.24	— 0.02	
	33	α Aquilæ. . . .	F.	4.7	7.3	8.8	15.0	17.1	19.2	25.3	26.9	29.4	45 17.08	— 0.70	—36.05	—36.09	19 44 40.29	0.00	
	34	λ Ursæ Minoris. .	F.	. .	. .	. .	54.0	45.0	34.0	21.0	. .	. .	50 43.50	— 8.51	. .	—36.09	19 49 58.90	— 1.65	
	35	B. A. C. 6959 . .	F.	20.6	24.7	27.2	36.7	40.0	43.2	53.0	55.5	59.7	9 40.07	— 0.83	. .	—36.10	20 9 3.14	— 1.63	
	36	B. A. C. 6990 . .	F.	32.0	35.2	37.0	44.8	47.4	50.0	57.7	59.7	3.0	13 47.42	— 0.77	. .	—36.10	20 13 10.55	— 1.88	
	37	π Capricorni. . .	F.	33.1	35.8	37.4	43.9	46.0	48.2	54.6	56.3	58.8	20 46.01	— 0.68	—36.06	—36.10	20 20 9.23	— 0.01	
	38	B. A. C. 7061 . .	F.	17.4	20.0	22.7	30.5	33.0	35.6	43.3	45.3	48.6	23 33.00	— 0.77	. .	—36.10	20 22 56.13	— 1.93	
	39	XX, 12	F.	43.1	45.9	47.5	54.1	56.4	58.7	5.3	6.9	9.6	30 56.39	— 0.67	. .	—36.11	20 30 19.61	— 2.94	
	40	B. A. C. 7176 . .	F.	21.6	26.6	29.5	11.9	15.9	20.1	32.4	35.4	40.5	38 15.99	— 0.89	. .	—36.11	20 37 38.99	— 1.68	
	41	B. A. C. 7204 . .	F.	31.0	34.2	36.0	43.4	45.8	48.3	55.7	57.4	0.5	41 45.81	— 0.75	. .	—36.11	20 41 8.95	— 2.08	
	42	Saturn I, N. . .	F.	55.4	58.0	59.7	. .	. .	. .	17.0	18.6	21.3	43 8.33	— 0.67	. .	—36.11	20 42 31.55	. .	
	43	Saturn II, S. . .	F.	. .	. .	5.3	7.5	9.7	11.9	14.0	. .	. .	43 9.68	— 0.67	. .	—36.11	20 42 32.90	. .	
	44	12 Yr. Cat. 1879 .	F.	. .	. .	28.7	40.8	52.7	5.5	17.0	. .	. .	53 52.94	— 1.47	. .	—36.12	20 53 15.35	— 0.03	
	45	σ^2 Ursæ Majoris, S. P.	F.	. .	. .	5.2	0.4	54.8	49.0	13.9	. .	. .	59 54.66	— 0.23	. .	—36.12	8 59 18.31	— 0.08	
	46	ζ Cygni	F.	59.5	2.5	4.3	11.3	13.6	16.1	23.0	24.8	27.8	8 13.66	— 0.74	—36.22	—36.12	21 7 36.80	+ 0.11	
	47	α Cephei(R.). . .	F.	44.9	50.2	53.5	6.4	11.0	15.3	28.3	31.5	36.9	16 10.89	+ 1.13	. .	—36.13	21 15 35.89	— 0.38	
	48	β Aquarii . . .	F.	23.0	25.5	27.0	33.0	35.1	37.2	43.3	44.9	47.4	25 35.16	— 0.69	—36.12	—36.13	21 24 58.34	+ 0.02	
	49	XXI, 12 . . .	F.	13.8	16.7	18.3	25.3	27.6	29.9	36.9	38.4	41.3	32 27.58	— 0.66	. .	—36.14	21 31 50.78	— 3.36	

7. Bisections at wires V and VI.
8, 44, 45. Bisections at sets B and D.
41. Telescope micrometer reading decreased five revolutions in reduction.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	11 16	10 12.3	9.8	2.7	3.2	34	. .	450	. .	400	. .	75.9	348 39 59.7	. .	− 11.6	39 46 9.3	+15.0
2	329 36	13.2	10.1	2.2	5.7	37	. .	050	. .	010	. .	75.9	30 20 40.0	. .	+ 33.8	81 27 35.0	− 2.7
3	327 8	16.2	12.5	6.0	7.6	31	540	500	. .	. .	. .	75.9	32 47 18.1	. .	+ 37.2	83 54 16.5	+ 1.2
4	49 56	13.5	9.1	1.8	3.2	29	. .	. .	850	. .	875	75.9	309 58 49.7	. .	− 1 8.8	1 4 2.1	− 2.0
5	2 4	13.5	11.2	3.2	4.2	29	. .	650	. .	650	. .	75.9	357 50 47.5	. .	− 2.2	48 57 6.5	+15.8
6	335 12	15.2	9.8	3.1	7.0	32	. .	. .	. .	325	320	75.9	24 43 29.4	. .	+ 26.6	75 50 17.2	+11.6
7	5 52	9.7	5.8	0.0	0.5	33	. .	. .	. .	160	100	75.9	354 3 36.9	. .	− 6.0	45 9 52.1	− 0.1
8	296 20	11.1	8.0	1.5	4.8	40	300	. .	175	. .	950	75.9	63 37 26.2	. .	+ 1 56.2	114 45 43.6	. .
9	350 46	12.5	10.0	2.7	4.1	36	470	420	. .	. .	. .	75.9	9 10 30.5	. .	+ 9.4	60 17 1.1	− 3.0
10	330 34	11.8	7.8	0.3	4.8	38	. .	. .	. .	540	505	75.9	29 23 1.7	. .	+ 32.7	80 29 55.6	+12.5
11	298 6	17.3	13.2	6.2	10.0	30	. .	510	. .	440	. .	75.9	61 49 3.4	. .	+ 1 47.8	112 57 12.4	+ 6.0
12	314 56	14.2	10.8	3.8	7.0	34	. .	045	. .	010	. .	75.9	44 59 55.1	55.5	+ 58.0	96 7 14.3	− 1.8
13	333 38	2.5	0.5	24.1	27.2	35	. .	748	. .	746	. .	76.0	26 18 11.3	66.8	+ 28.2	77 25 0.7	− 2.1
14	341 32	9 27.4	25.1	18.0	23.7	37	. .	890	. .	862	. .	76.0	18 24 38.9	. .	+ 18.9	69 31 19.0	− 0.5
15	156 24	10 3.4	3.0	25.4	21.2	33	. .	. .	. .	434	490	76.0	203 31 35.2	. .	+ 24.7	27 34 21.3	+ 2.1
16	342 16	1.5	1.2	24.6	29.4	37	. .	124	. .	128	. .	76.0	17 40 33.0	. .	+ 18.2	68 47 12.4	− 0.5
17	339 20	9 24.9	22.0	15.5	23.2	38	. .	170	. .	184	. .	76.0	23 36 41.3	71.6	+ 24.6	74 43 27.1	− 0.1
18	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
19	321 32	18.5	17.8	10.4	15.0	39	. .	. .	. .	608	424	76.0	38 24 55.6	71.7	+ 44.7	89 32 1.5	. .
20	52 22	29.8	24.8	19.5	22.4	32	174	. .	190	. .	250	76.0	307 33 12.3	73.1	− 1 12.8	358 38 20.7	− 1.9
21	340 54	28.3	27.4	19.8	26.0	39	. .	. .	. .	208	180	76.0	19 3 1.4	. .	+ 19.4	70 9 42.0	+ 0.4
22	305 32	10 0.4	28.7	22.2	0.5	33	. .	060	. .	030	. .	76.0	54 23 29.1	73.1	+ 1 18.2	105 31 8.5	− 0.6
23	299 34	5.2	0.2	23.5	0.2	37	. .	. .	. .	780	780	77.1	60 22 44.8	62.0	+ 1 40.5	111 30 46.5	− 5.3
24	345 6	8.0	3.8	26.5	1.0	33	945	940	. .	. .	. .	77.1	14 49 48.4	. .	+ 15.2	65 56 24.8	+ 9.5
25	14 14	14.9	11.7	5.4	10.4	32	. .	. .	. .	826	806	77.1	345 41 25.2	. .	− 14.6	36 47 31.8	+14.1
26	287 44	6.8	2.0	24.0	0.3	40	040	024	. .	. .	. .	77.1	72 13 19.5	. .	+ 2 57.0	123 22 37.7	− 7.8
27	291 50	5.2	28.8	20.6	26.7	35	. .	980	. .	964	. .	77.1	68 6 14.8	. .	+ 2 21.8	119 14 57.8	− 6.3
28	323 56	0.7	26.7	19.5	26.0	38	740	722	. .	. .	. .	77.1	36 0 54.8	. .	+ 41.7	87 7 57.7	− 1.4
29	310 36	7.4	4.1	26.4	1.3	34	. .	. .	. .	444	454	77.1	19 19 56.7	61.1	+ 20.2	70 26 38.1	+ 9.3
30	8 56	9 25.5	22.4	13.2	22.1	35	. .	. .	858	. .	. .	77.1	351 0 6.3	. .	− 9.1	42 6 18.4	+14.7
31	10 58	29.0	24.7	18.7	21.4	34	. .	. .	. .	310	266	77.1	348 57 45.9	. .	− 11.2	40 3 55.9	+15.0
32	331 22	10 6.0	1.6	22.8	2.4	36	. .	954	. .	944	. .	77.1	28 34 32.9	. .	+ 31.3	79 41 25.4	+ 2.0
33	329 36	12.2	7.0	28.8	4.7	37	. .	182	. .	194	. .	77.1	30 20 41.6	. .	+ 33.6	81 27 36.4	− 1.3
34	49 56	28.2	23.7	15.1	18.4	28	. .	760	824	780	. .	77.1	309 58 48.6	. .	− 1 8.4	1 4 1.4	− 2.5
35	12 8	13.6	7.6	2.0	5.1	36	. .	. .	. .	. .	014	77.1	347 48 26.3	. .	− 12.4	38 54 35.1	+16.2
36	358 42	5.7	2.0	23.8	28.7	38	. .	068	. .	048	. .	77.1	1 14 49.5	. .	+ 1.3	52 21 12.0	+15.0
37	302 26	7.5	3.8	26.0	2.3	32	. .	778	. .	764	. .	77.1	57 29 30.5	60.5	+ 1 30.0	108 37 21.7	+ 2.0
38	359 4	5.7	2.2	24.1	0.0	33	. .	. .	. .	678	668	77.1	0 51 43.3	. .	+ 0.9	51 58 5.4	+15.4
39	297 18	11.4	6.1	28.8	6.4	35	. .	. .	. .	248	244	77.1	60 38 11.9	. .	+ 1 41.9	111 46 15.0	+ 2.1
40	21 4	6.1	2.1	26.0	1.0	29	568	610	. .	. .	. .	77.1	338 50 41.3	. .	− 22.3	29 56 40.2	+17.1
41	354 32	6.6	3.0	25.7	0.9	37	032	040	. .	. .	. .	77.1	5 23 18.5	. .	+ 5.4	56 29 45.1	+15.4
42	301 54	9 25.8	21.9	14.4	22.6	35	. .	980	. .	. .	. .	77.1	58 2 8.1	. .	+ 1 32.0	109 10 1.3	. .
43	301 54	25.8	21.9	14.4	22.6	37	. .	. .	. .	058	052	77.1	58 2 25.2	. .	+ 1 32.0	109 10 18.4	. .
44	41 6	10 11.7	6.5	29.6	3.3	32	. .	546	. .	560	. .	77.1	318 49 30.4	. .	− 50.4	9 55 1.2	− 0.7
45	73 22	11 24.2	16.2	9.2	14.2	36	. .	740	. .	804	. .	77.1	286 35 15.3	. .	− 3 10.9	337 38 25.6	+ 1.2
46	350 46	10 7.4	3.1	25.5	1.0	36	890	880	. .	. .	. .	77.1	9 10 32.9	. .	+ 9.3	60 17 3.4	− 0.5
47	156 46	9.5	4.8	27.0	6.5	32	. .	260	. .	290	. .	77.1	203 9 24.4	. .	+ 24.7	27 56 32.1	− 4.9
48	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
49	293 12	4.2	28.5	21.2	28.3	33	. .	136	. .	146	. .	77.1	66 43 31.7	59.2	+ 2 13.2	117 52 6.1	+ 5.8

No.	Barom.	At. Ther.
	in.	°
12	30.24	59.0
13	30.30	61.0
14	30.29	67.0
15	30.30	67.5
16	30.27	67.5
17	30.26	68.5
18	30.26	66.5
19	30.25	65.0
20	30.26	64.0
21	30.26	63.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	° ′ ″
8	− 52 8.7	− 15 55.8	. .	−1 8 4.5
19	− 5.5	+ 15 59.2	. .	+ 15 53.7
42	− 0.8	+ 8.6	. .	+ 7.8
43	− 0.8	− 8.6	. .	− 9.4

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Sept. 22	1	ε Pegasi	F.	. .	. .	35.1	37.3	39.3	41.4	43.6	. .	. .	38 39.34	− 0.70	−36.13	−36.14	21 38 2.50	0.00
	2	Moon I, S.	F.	. .	. .	2.7	5.0	7.1	9.4	11.3	. .	. .	40 7.10	− 0.67	. .	−36.14	21 39 30.29	+71.27
	3	B. A. C. 7636	F.	10.0	14.6	17.3	28.0	31.6	35.2	46.0	48.9	53.4	49 31.67	− 0.86	. .	−36.14	21 48 54.67	− 2.30
	4	B. A. C. 7676	F.	. .	. .	46.3	49.7	53.1	56.5	59.8	. .	. .	57 53.08	− 0.83	. .	−36.15	21 57 16.10	− 2.30
	5	B. A. C. 7778	F.	. .	. .	56.1	59.9	3.7	7.3	11.0	. .	. .	11 3.60	− 0.86	. .	−36.16	22 10 26.58	− 2.45
	6	ζ Pegasi	F.	38.0	40.5	42.2	48.4	50.5	52.6	58.6	0.2	2.8	35 50.42	− 0.71	−36.25	−36.17	22 35 13.54	+ 0.14
	7	B. A. C. 7943	F.	51.1	53.8	55.3	1.6	3.8	5.8	12.1	13.6	16.1	41 3.69	− 0.71	. .	−36.17	22 40 26.81	− 2.70
	8	λ Aquarii	F.	30.0	32.7	34.2	40.3	42.4	44.5	50.7	52.1	54.7	46 42.40	− 0.68	−36.24	−36.18	22 46 5.54	+ 0.14
	9	α Piscis Australis	F.	7.3	10.3	11.9	19.0	21.4	23.8	30.9	32.7	35.7	51 21.44	− 0.66	−36.10	−36.18	22 50 44.60	− 0.04
	10	α Pegasi	F.	56.1	58.8	0.5	6.7	8.8	11.0	17.4	19.0	21.4	59 8.86	− 0.71	−36.20	−36.18	22 58 31.97	+ 0.05
	11	XXIII, 3	F.	46.8	50.0	57.0	59.6	2.0	4.4	7.0	14.0	17.2	4 2.00	− 0.66	. .	−36.18	23 3 25.10	− 3.78
	12	B. A. C. 8076	F.	. .	. .	. .	. .	20.6	23.4	28.9	31.0	34.5	5 17.79	− 0.70	. .	−36.18	23 4 40.82	− 2.71
	13	o Cephei	F.	36.4	42.8	46.8	2.9	8.4	13.4	29.5	33.2	39.9	14 8.14	− 0.99	. .	−36.19	23 13 30.96	+ 0.13
	14	α Leonis	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	15	γ^1 Leonis	S.	26.6	29.4	31.0	. .	. .	. .	48.3	50.0	52.6	13 39.65	− 0.75	−36.64	−36.61	10 13 2.26	+ 0.01
	16	γ^2 Leonis	S.	. .	. .	35.6	37.8	40.0	42.2	44.3	. .	. .	13 39.98	− 0.75	. .	−36.61	10 13 2.62	+ 0.37
	17	α Ursæ Majoris	S.	. .	. .	25.5	29.8	34.3	38.7	43.2	. .	. .	56 34.30	− 0.90	. .	−36.63	10 55 56.68	0.00
	18	δ Leonis	S.	49.3	52.0	53.6	0.3	2.4	4.6	11.3	12.8	15.6	8 2.43	− 0.75	−36.64	−36.63	11 7 25.05	− 0.05
23	19	Sun I, N.	S.	5.4	8.0	9.5	15.7	17.9	19.8	26.0	27.5	30.0	1 17.76	− 0.71	. .	−36.67	12 0 40.38	. .
	20	Sun II, S.	S.	13.6	16.4	17.8	23.9	25.9	28.0	34.0	35.6	38.2	3 25.93	− 0.71	. .	−36.67	12 2 48.55	. .
	21	Polaris, S. P.	S.	. .	. .	. .	12.6	45.5	18.0	. .	. .	. .	13 45.33	+ 7.09	. .	−36.70	1 13 15.72	− 2.46
	22	η Ursæ Majoris	S.	. .	. .	5.9	9.6	12.2	15.5	18.6	. .	. .	43 12.24	− 0.87	. .	−36.72	13 42 34.65	− 0.04
	23	α Bootis	S.	19.8	22.6	24.2	30.8	33.0	35.1	41.5	43.2	45.9	32 0.90	− 0.75	−36.68	−36.74	14 9 55.41	− 0.00
	24	ε Bootis	S.	53.4	56.3	58.0	4.6	7.1	9.6	16.3	18.0	21.0	40 7.18	− 0.77	−36.71	−36.75	14 39 29.66	− 0.06
	25	β Ursæ Minoris	S.	. .	. .	. .	33.8	41.9	49.8	57.6	. .	. .	51 41.89	− 1.30	. .	−36.76	14 51 3.83	+ 0.29
	26	Venus I, N.	S.	10.7	13.3	15.0	. .	. .	. .	32.4	33.9	36.6	55 23.65	− 0.69	. .	−36.76	14 54 46.20	+ 0.97
	27	Venus II, S.	S.	. .	. .	20.6	22.7	24.8	27.0	29.2	. .	. .	55 24.86	− 0.69	. .	−36.76	14 54 47.41	− 0.24
	28	α Lyræ	S.	3.7	6.8	9.0	16.8	19.3	22.1	30.0	31.8	35.0	33 19.39	− 0.81	−36.93	−35.88	18 32 41.70	+ 0.07
	29	51 Cephei, S. P.	S.	. .	. .	58.5	16.7	35.0	52.2	9.0	. .	. .	41 34.28	+ 3.11	. .	−36.88	6 41 0.51	+ 0.82
	30	ζ Aquilæ (R.)	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	31	B. A. C. 6599	S.	. .	. .	33.8	36.4	39.0	41.6	44.0	. .	. .	12 38.96	− 0.80	. .	−36.90	19 12 1.26	− 1.51
	32	Moon I, S	S.	14.0	16.7	18.3	24.7	27.0	29.2	35.6	37.0	39.8	37 26.92	− 0.69	. .	−37.01	22 36 49.22	+70.10
	33	α Piscis Australis	S.	8.2	11.2	12.9	20.0	22.3	24.8	31.8	33.6	36.6	51 22.38	− 0.67	−37.03	−37.02	22 50 44.69	+ 0.05
	34	α Pegasi	S.	57.0	59.6	1.2	7.5	9.6	11.8	18.0	19.7	22.4	59 9.64	− 0.74	−36.95	−37.02	22 58 31.88	− 0.04
	35	B. A. C. 8317	S.	. .	. .	48.9	52.0	56.5	0.2	4.0	. .	. .	49 56.44	− 0.92	. .	−37.05	23 49 18.47	− 3.09
	36	XXIII, 18	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	37	XXIII, 20	S.	. .	. .	19.8	22.4	25.0	27.7	30.3	. .	. .	1 25.04	− 0.66	. .	−37.05	0 0 47.33	− 3.81
	38	α Andromedæ	S.	. .	. .	. .	. .	35.7	38.1	42.8	44.5	47.4	2 33.45	− 0.77	−37.15	−37.05	0 1 55.63	+ 0.12
	39	ε Leonis	Sk.	7.5	10.3	11.9	18.6	20.9	23.0	29.8	31.4	34.3	39 20.86	− 0.92	−37.14	−37.14	9 38 42.80	− 0.06
	40	α Leonis	Sk.	5.7	8.7	10.2	16.5	18.5	20.6	26.8	28.5	30.9	2 18.49	− 0.89	−37.16	−37.17	10 1 40.43	− 0.05
	41	γ^1 Leonis	Sk.	27.3	30.0	31.7	38.0	40.4	42.6	49.2	50.6	53.5	13 40.37	− 0.90	−37.19	−37.17	10 13 2.30	0.00
	42	α Ursæ Majoris (R.)	Sk.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
24	43	Sun I, S.	Sk.	42.1	44.7	45.9	52.0	54.1	56.2	2.5	4.3	6.8	4 54.29	− 0.80	. .	−37.21	12 4 16.22	. .
	44	Sun II, N.	Sk.	50.4	53.0	54.3	0.3	2.4	4.5	10.7	12.1	14.6	7 2.48	− 0.86	. .	−37.21	12 6 24.41	. .
	45	Mercury C.	Sk.	53.0	55.6	57.3	3.3	5.4	7.5	13.6	15.1	17.6	54 5.38	− 0.85	. .	−37.24	12 53 27.29	+ 0.01
	46	Polaris, S. P.	Sk.	. .	. .	. .	12.0	42.0	18.0	56.0	. .	. .	13 45.00	+ 8.24	. .	−37.25	1 13 15.99	− 2.43
	47	α Virginis	Sk.	59.6	2.2	3.7	9.9	12.0	14.0	20.5	21.9	24.5	19 12.03	− 0.84	−37.28	−37.25	13 18 33.94	+ 0.01
	48	η Bootis	Sk.	7.0	9.7	11.3	17.7	19.9	22.0	28.4	30.0	32.9	49 19.88	− 0.91	−37.25	−37.27	13 48 41.70	− 0.07

1, 17, 22, 25, 35, 42. Bisections at sets B and D.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	330 20	9 27.3	22.5	15.9	23.4	31	. .	. .	. .	300	302	77.1	29 34 58.1	. .	+ 32.8	80 41 52.1	+ 0.8
2	500 58	10 10.3	4.8	27.3	4.5	31	. .	750	420	016	. .	77.1	58 57 11.3	. .	+ 1 35.6	110 5 8.1	. .
3	16 40	9 28.5	25.1	18.5	24.4	36	. .	. .	. .	710	690	77.1	343 16 23.6	. .	− 17.4	34 22 27.4	+17.8
4	13 18	10 11.5	7.4	0.2	3.8	30	. .	. .	. .	724	700	77.1	346 37 3.4	. .	− 13.8	37 43 10.8	+19.2
5	17 28	6.2	2.2	25.5	0.2	37	. .	426	. .	438	. .	77.1	342 28 41.1	57.2	− 18.3	33 31 44.0	+19.0
6	351 14	3.1	29.5	21.9	27.9	36	. .	378	. .	374	. .	77.1	28 42 21.6	. .	+ 31.7	79 49 14.5	− 0.5
7	332 34	4.5	1.6	22.6	29.2	31	. .	780	. .	772	. .	77.1	27 21 12.5	. .	+ 30.0	78 28 3.7	+17.0
8	312 48	1.4	26.6	18.1	28.7	32	. .	342	. .	560	. .	77.1	47 7 17.9	. .	+ 1 2.4	98 14 41.5	− 0.4
9	290 48	2.7	27.1	19.3	28.2	36	. .	188	. .	174	. .	77.1	69 8 17.0	. .	+ 2 31.1	120 17 9.3	+ 0.4
10	335 34	5.5	2.6	24.3	2.6	31	. .	836	. .	818	. .	77.1	24 21 15.1	. .	+ 26.3	75 28 2.6	+ 1.4
11	285 2	5.0	0.0	23.0	29.5	38	009	982	. .	. .	. .	77.1	74 54 46.8	. .	+ 3 32.1	126 4 40.1	+12.8
12	3 54	3.0	0.8	23.3	28.0	32	. .	. .	. .	290	280	77.1	356 1 20.4	. .	− 4.0	47 7 37.6	+18.0
13	28 28	6.1	3.5	25.8	0.7	36	. .	774	. .	786	. .	77.1	231 28 31.9	55.0	+ 31.6	22 35 21.5	− 3.5
14	333 38	5.4	4.5	26.7	2.1	35	. .	558	. .	474	. .	77.6	26 18 13.0	. .	+ 28.0	77 25 2.2	− 0.7
15	341 32	11.2	10.3	1.8	6.2	36	936	. .	. .	. .	924	77.6	18 24 40.0	69.2	+ 18.9	69 31 20.1	+ 0.4
16	341 32	11.2	10.3	1.8	6.2	37	. .	064	. .	016	. .	77.6	18 24 41.5	. .	+ 18.9	69 31 21.6	+ 1.9
17	23 28	3.4	3.0	25.5	28.7	36	. .	060	. .	150	. .	77.6	336 27 19.8	71.3	− 24.6	27 33 16.4	− 3.1
18	342 16	9.1	8.2	0.6	4.5	36	. .	543	. .	527	. .	77.6	17 40 32.0	. .	+ 18.0	68 47 11.2	− 1.9
19	321 8	9 29.2	26.9	20.5	27.0	36	320	446	. .	. .	. .	77.6	38 48 20.0	73.5	+ 45.2	89 55 26.4	. .
20	320 36	10 0.6	29.6	21.4	27.3	36	. .	. .	. .	150	222	77.6	39 20 18.0	. .	+ 46.0	90 27 25.2	. .
21	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
22	10 58	9.3	9.8	1.7	5.2	31	590	. .	. .	. .	594	77.6	348 57 17.2	. .	− 11.2	40 3 27.2	− 1.5
23	340 54	12.2	11.8	4.5	9.5	38	. .	202	. .	284	. .	77.6	19 3 2.1	. .	+ 19.3	70 9 42.6	+ 0.9
24	348 38	13.0	12.4	3.0	6.5	30	. .	668	. .	698	. .	77.6	11 17 5.6	. .	+ 11.1	62 23 37.9	+ 0.4
25	35 42	15.6	14.3	7.2	8.7	34	. .	. .	. .	310	. .	77.6	324 14 3.9	. .	− 40.1	15 19 45.0	− 2.9
26	301 16	27.4	29.3	20.9	25.0	33	. .	118	. .	144	. .	77.6	58 39 59.7	. .	+ 1 31.0	109 47 51.9	. .
27	301 16	27.4	29.3	20.9	25.0	34	604	. .	. .	. .	648	77.6	58 40 22.4	78.7	+ 1 31.0	109 48 14.6	. .
28	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
29	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
30	205 7	8 { 1.7 / 12 { 1.3	0.0 / 0.3	8.7 / 9.2	11.9 / 12.1	36	750	740	730	740	810	77.6	154 49 35.2	65.4	− 26.8	76 19 12.8	+ 0.6
31	358 58	14.7	13.5	5.2	7.5	37	. .	. .	. .	144	140	77.6	0 58 45.8	. .	+ 1.0	52 5 8.0	+12.7
32	306 58	6.0	9.2	27.1	2.3	32	832	. .	. .	. .	652	77.6	52 57 31.9	. .	+ 1 16.1	104 5 9.2	. .
33	290 48	14.8	10.3	3.0	7.7	35	. .	434	. .	406	. .	77.6	69 8 18.0	. .	+ 2 29.9	120 17 9.1	+ 0.1
34	335 34	20.6	17.9	8.8	13.9	30	. .	. .	. .	776	726	77.6	24 21 13.5	. .	+ 26.1	75 28 0.8	− 0.3
35	17 44	19.5	17.0	9.8	11.0	29	942	. .	. .	. .	870	77.6	342 10 59.2	. .	− 18.6	33 17 1.8	+16.5
36	287 12	19.8	17.1	9.3	13.4	32	. .	. .	. .	947	961	77.6	72 43 46.4	. .	+ 3 3.5	123 53 11.1	+17.2
37	282 30	18.4	15.8	7.5	12.0	37	700	760	. .	. .	. .	77.6	77 26 57.2	. .	+ 4 13.4	128 37 31.8	+17.6
38	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		58.8	. .		. .
39	345 24	2.5	29.0	24.0	27.6	35	. .	735	. .	730	. .	77.0	14 32 11.9	69.8	+ 14.7	65 38 47.8	− 1.2
40	333 38	14.4	11.3	5.5	7.1	35	. .	112	. .	117	. .	77.0	26 18 13.6	. .	+ 27.1	77 25 1.9	− 1.1
41	341 32	3.5	4.0	27.5	0.5	37	. .	452	. .	448	. .	77.0	18 24 41.3	. .	+ 18.3	69 31 20.8	+ 0.9
42	156 24	5.9	7.0	28.9	2.0	33	. .	. .	250	. .	240	77.0	203 31 38.8	74.5	+ 24.5	27 34 17.9	− 2.0
43	320 12	3.1	2.7	26.1	29.1	33	570	640	. .	. .	. .	77.0	39 43 41.3	. .	+ 46.5	90 50 49.0	. .
44	320 44	7.5	7.5	0.6	3.8	33	. .	. .	. .	400	405	77.0	39 11 42.5	76.3	+ 45.6	90 18 49.3	. .
45	315 26	5.6	6.0	29.6	1.5	36	. .	055	. .	140	. .	77.0	44 30 22.2	. .	+ 54.8	95 37 38.2	. .
46	52 22	0.4	0.3	25.6	26.7	31	938	950	920	970	918	77.0	307 33 13.8	. .	− 1 12.4	358 38 22.6	− 0.7
47	310 34	1.6	2.6	26.9	0.4	38	. .	089	. .	078	. .	77.0	49 22 49.8	. .	+ 1 4.9	100 30 15.9	− 0.5
48	340 4	4.6	5.6	27.0	27.3	33	. .	048	. .	030	. .	77.0	19 51 33.4	78.1	+ 20.1	70 58 14.7	+ 0.3

No.	Barom.	At. Ther.
	in.	°
5	30.24	62.0
13	30.24	61.0
15	30.20	63.5
19	30.30	69.5
31	30.27	68.0
33	30.28	63.5
38	30.27	62.0
39	30.34	65.3
42	30.34	69.2
44	30.33	70.5
48	30.32	75.8

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	° ′ ″
2	−50 40.9	− 16 11.8	. .	−1 6 52.7
19	− 5.5	+ 15 59.4	. .	+ 15 53.9
20	− 5.6	− 15 59.4	. .	− 16 5.0
26	− 10.5	+ 11.5	. .	+ 1.0
27	− 10.5	− 11.5	+ 0.3	− 21.7
32	−47 52.7	− 16 25.8	. .	−1 4 18.5
43	− 5.7	− 15 59.8	. .	− 16 5.5
44	− 5.6	+ 15 59.8	. .	+ 15 54.2
45	− 5.2	. .	+ 0.1	− 5.1

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS.. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Sept. 24	1	ϵ Bootis . . .	Sk.	54.1	57.0	58.7	5.5	7.9	10.3	17.0	18.9	21.7	40 7.90	— 0.93	−37.27	−37.30	14 39 29.67	— 0.05
	2	α^2 Libræ . . .	Sk.	20.9	23.4	25.0	31.4	33.5	35.7	42.0	43.6	46.2	44 33.52	— 0.83	−37.32	−37.30	14 43 55.39	+ 0.01
	3	Venus I, N. .	Sk.	12.5	15.1	16.9	23.4	25.5	27.7	34.3	36.0	38.6	59 25.56	— 0.83	. .	−37.30	14 58 47.43	+ 0.62
	4	δ Aquilæ. . .	Sk.	36.9	39.4	40.9	47.0	19.2	51.2	57.2	58.8	1.3	19 49.10	— 0.80	−37.49	−37.44	19 19 10.86	+ 0.10
	5	B. A. C. 6712 . .	Sk.	18.5	23.3	26.0	38.0	41.9	46.0	57.3	0.3	4.9	29 41.80	— 0.98	. .	−37.44	19 29 3.38	— 1.08
	6	γ Aquilæ. . .	Sk.	. .	. .	52.3	54.4	56.6	58.6	0.6	. .	. .	41 56.50	— 0.81	−37.43	−37.45	19 40 18.24	+ 0.01
	7	α Aquilæ. . .	Sk.	6.2	8.8	10.4	16.6	18.7	20.7	26.8	28.3	30.9	45 18.60	— 0.81	−37.49	−37.45	19 44 40.34	+ 0.09
	8	λ Ursæ Minoris .	Sk.	. .	. .	. .	. .	40.5	32.0	20.0	. .	. .	50 41.30	— 8.99	. .	−37.46	19 49 54.85	— 3.27
	9	B. A. C. 6962 . .	Sk.	42.8	46.4	48.5	57.4	0.5	3.5	12.3	14.6	18.2	10 0.47	— 0.91	. .	−37.46	20 9 22.10	— 1.67
	10	XX, 5 . . .	Sk.	. .	. .	46.1	48.8	51.4	53.8	56.3	. .	. .	12 51.28	— 0.77	. .	−37.46	20 12 13.05	— 3.21
	11	B. A. C. 7041 . .	Sk.	26.1	29.8	31.8	40.2	42.8	45.6	54.0	56.0	59.5	21 42.87	— 0.89	. .	−37.47	20 21 4.51	— 1.81
	12	XX, 9 . . .	Sk.	40.9	43.9	45.5	52.7	55.0	57.4	4.3	6.0	9.0	23 54.97	— 0.77	. .	−37.47	20 23 16.73	— 3.10
	13	XX, 12 . . .	Sk.	. .	. .	. .	. .	0.2	2.4	6.7	8.6	11.1	30 57.99	— 0.78	. .	−37.48	20 30 19.73	— 2.92
	14	B. A. C. 7176 . .	Sk.	. .	. .	9.0	13.0	17.2	21.3	25.5	. .	. .	38 17.20	— 1.00	. .	−37.48	20 37 38.72	— 1.61
	15	Saturn I, N. .	Sk.	41.5	44.3	45.9	. .	. .	. .	3.0	4.7	7.4	42 54.47	— 0.78	. .	−37.48	20 42 16.21	. .
	16	Saturn II, S. .	Sk.	. .	. .	53.0	55.0	57.3	59.8	1.8	. .	. .	42 57.38	— 0.78	. .	−37.48	20 42 19.12	. .
	17	XXI, 4 . . .	Sk.	. .	. .	6.8	9.3	12.0	14.6	17.2	. .	. .	19 11.98	— 0.77	. .	−37.50	21 18 33.71	— 3.67
	18	B. A. C. 7448 . .	Sk.	. .	. .	18.9	22.2	25.6	28.1	32.1	. .	. .	20 25.38	— 0.93	. .	−37.50	21 19 46.95	— 2.08
	19	XXI, 8 . . .	Sk.	2.9	5.9	7.9	15.2	17.7	20.4	27.7	29.6	32.7	28 17.78	— 0.77	. .	−37.51	21 27 39.50	— 3.56
	20	XXI, 15 . . .	Sk.	53.2	56.3	58.2	5.5	8.0	10.6	17.8	19.8	22.7	38 8.01	— 0.77	. .	−37.51	21 37 29.73	— 3.55
	21	XXI, 20 . . .	Sk.	39.0	42.0	44.0	51.3	53.6	56.0	3.5	5.3	8.3	55 53.67	— 0.77	. .	−37.52	21 55 15.38	— 3.57
	22	B. A. C. 7683 . .	Sk.	8.5	13.3	16.2	27.6	31.3	35.2	46.7	49.4	54.0	58 31.36	— 0.97	. .	−37.52	21 57 52.87	— 2.32
	23	B. A. C. 7736[1]. .	Sk.	. .	42.0	45.0	. .	. .	. .	. .	19.3	. .	5 0.67	— 0.99	. .	−37.52	22 4 22.16	— 2.35
	24	B. A. C. 7736[2]. .	Sk.	. .	. .	54.8	58.7	2.8	6.6	10.8	. .	. .	5 2.74	— 0.99	. .	−37.52	22 4 24.23	— 2.35
	25	B. A. C. 7820 . .	Sk.	50.9	53.0	59.5	2.4	5.6	8.7	11.8	18.0	20.1	20 5.56	— 0.92	. .	−37.53	22 19 27.11	— 2.45
	26	B. A. C. 7846 . .	Sk.	. .	. .	0.6	4.0	7.4	11.0	14.4	. .	. .	25 7.48	— 0.95	. .	−37.53	22 24 29.00	— 2.75
	27	B. A. C. 7875 . .	Sk.	. .	. .	. .	58.7	3.2	7.3	11.7	20.2	23.5	30 3.18	— 1.02	. .	−37.54	22 29 24.62	— 2.61
	28	XXII, 11 . . .	Sk.	20.8	22.6	27.9	30.7	33.1	35.7	38.2	43.4	45.3	36 33.08	— 0.77	. .	−37.54	22 35 54.77	— 3.86
	29	XXII, 16 . . .	Sk.	0.6	3.7	5.9	13.3	15.8	18.4	26.0	27.9	31.0	52 15.84	— 0.77	. .	−37.55	22 51 37.52	— 3.79
	30	B. A. C. 8076 . .	Sk.	2.6	6.1	8.0	16.5	19.4	21.9	30.6	32.5	35.9	5 19.28	— 0.89	. .	−37.56	23 4 40.83	— 2.71
	31	B. A. C. 8158 . .	Sk.	43.5	48.3	51.0	2.3	6.0	9.9	21.0	23.8	28.5	19 6.03	— 0.97	. .	−37.56	23 18 27.50	— 2.91
	32	Moon I, S. . .	Sk.	6.4	8.9	10.6	17.0	19.1	21.3	27.6	29.0	31.7	33 19.07	— 0.79	. .	−37.57	23 32 40.71	+69.37
	33	XXIII, 16 . . .	Sk.	. .	. .	37.5	39.8	42.1	44.4	46.7	. .	. .	50 42.10	— 0.77	. .	−37.58	23 50 3.75	— 3.42
	34	XXIII, 18 . . .	Sk.	. .	. .	. .	. .	. .	. .	59.3	1.1	4.3	51 49.46	— 0.77	. .	−37.58	23 51 11.11	— 3.66
	35	XXIII, 20 . . .	Sk.	. .	. .	20.4	23.0	25.6	28.3	30.9	. .	. .	1 25.64	— 0.76	. .	−37.59	0 0 47.29	— 3.81
	36	γ Pegasi . . .	Sk.	13.5	16.1	17.7	24.0	26.2	28.3	34.6	36.2	38.9	7 26.17	— 0.82	−37.50	−37.59	0 6 47.76	— 0.09
	37	β Ceti . . .	Sk.	44.4	47.0	48.8	55.4	57.5	59.6	6.0	7.7	10.4	37 57.42	— 0.78	−37.57	−37.60	0 37 19.04	+ 0.02
	38	ϵ Leonis . . .	E.	8.2	11.0	12.8	19.4	21.6	24.0	30.8	32.4	35.2	39 21.71	— 0.86	−38.03	−38.15	9 38 42.70	— 0.15
	39	α Leonis . . .	E.	6.8	9.5	11.0	17.4	19.5	21.5	27.7	29.4	32.0	2 19.42	— 0.82	−38.14	−38.15	10 1 40.45	— 0.05
	40	γ^1 Leonis . . .	E.	28.3	30.9	32.5	39.0	41.3	43.5	50.1	51.7	54.5	13 41.31	— 0.85	−38.16	−38.16	10 13 2.30	— 0.02
	41	α Ursæ Majoris (R.).	E.	. .	. .	. .	. .	37.8	42.2	50.9	54.3	59.8	56 33.33	+ 1.21	. .	−38.18	10 55 56.36	— 0.36
	42	δ Leonis . . .	E.	50.8	53.7	55.3	1.9	4.1	6.3	12.9	14.5	17.1	8 4.07	— 0.85	−38.16	−38.19	11 7 25.03	— 0.09
	43	λ Draconis . . .	E.	5.6	10.0	22.0	27.8	34.0	39.8	45.9	57.8	2.3	24 33.91	— 1.42	. .	−38.19	11 23 54.30	+ 0.31
	44	γ Cephei, S. P. .	E.	47.1	36.4	30.5	12.7	3.2	. .	. .	. .	. .	34 53.90	+ 0.52	. .	−38.20	23 34 16.22	+ 0.45
	45	β Leonis . . .	E.	5.0	7.5	9.0	15.4	17.6	19.8	26.0	27.6	30.2	43 17.57	— 0.83	−38.23	−38.20	11 42 38.54	+ 0.01
	46	γ Ursæ Majoris . .	E.	30.3	34.9	37.4	47.8	51.3	54.9	5.5	8.0	12.5	47 51.40	— 1.08	. .	−38.20	11 47 12.12	— 0.04
25	47	Sun I, S. . .	E.	18.7	21.4	22.8	29.0	31.0	33.0	39.2	40.8	43.1	8 31.00	— 0.78	. .	−38.21	12 7 52.01	. .
	48	Sun II, N. . .	E.	29.7	31.0	35.2	37.2	39.3	41.3	43.4	47.4	49.0	10 39.28	— 0.78	. .	−38.21	12 10 0.29	. .
	49	12 Canum Venat. .	E.	31.7	35.0	37.0	44.9	47.4	50.1	58.1	59.9	3.3	50 47.49	— 0.94	−38.20	−38.24	12 50 8.31	— 0.04
	50	Mercury I, C. .	E.	38.9	41.3	42.9	49.0	51.1	53.3	59.5	0.9	3.6	59 51.17	— 0.77	. .	−38.24	12 59 12.16	+ 0.16

14 23, 24, 26, 27, 28, 32, 43. Bisections at sets B and D.
37. Telescope micrometer reading decreased one revolution in reduction.
44. Bisections at wires II and III.

No.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	348 38	10 10.4	9.0	3.1	2.1	30	. .	912	. .	908	. .	77.0	11 17 5.9	. .	+ 11.1	62 23 38.2	+ 0 5
2	305 32	5.0	4.0	26.0	28.5	32	. .	938	. .	953	. .	77.0	54 23 31.6	. .	+ 1 17.7	105 31 10.5	+ 1.5
3	300 54	6.8	6.7	28.0	1.5	34	. .	300	. .	290	. .	77.0	59 1 54.6	77.2	+ 1 32.7	110 9 48.5	. .
4	323 56	11.0	8.8	27.7	2.1	38	. .	270	. .	170	. .	76.0	36 0 55.5	65.6	+ 41.4	87 7 58.1	− 1.0
5	19 22	6.3	3.6	26.7	26.2	34	. .	314	. .	340	. .	76.0	340 33 52.2	. .	− 20.1	31 39 53.3	+15.6
6	331 22	4.5	22.9	23.2	28.9	36	. .	938	. .	840	. .	76.0	28 34 27.6	. .	+ 31.1	79 41 19.9	− 3.4
7	329 36	10.0	7.1	28.5	3.0	37	. .	445	. .	415	. .	76.0	30 20 43.2	. .	+ 33.4	81 27 37.8	+ 0.2
8	49 56	11.8	6.0	28.8	0.3	30	. .	. .	025	020	000	76.0	309 58 49.4	. .	− 1 8.0	1 4 2.6	− 1.1
9	7 28	8.3	5.7	28.0	1.5	32	210	265	. .	. .	. .	76.0	352 27 22.6	. .	− 7.6	43 33 36.2	+16.1
10	286 8	14.8	10.3	1.8	4.0	38	. .	. .	. .	470	490	76.0	73 49 2.2	. .	+ 3 14.3	124 58 37.7	− 3.6
11	3 14	10.7	8.5	28.5	1.5	33	870	890	. .	. .	. .	76.0	356 41 49.0	. .	− 3.3	47 48 6.9	+16.1
12	291 32	5.5	3.0	23.5	28.5	31	. .	. .	. .	750	800	76.0	68 23 12.1	. .	+ 2 23.3	119 31 56.6	− 0.9
13	299 18	17.0	13.1	5.0	7.6	34	. .	. .	. .	950	945	76.0	60 38 11.3	. .	+ 1 41.4	111 46 13.9	+ 2.0
14	21 4	7.7	4.5	25.2	26.8	29	670	. .	. .	. .	642	76.0	338 50 40.6	. .	− 22.2	29 56 39.6	+17.6
15	301 54	5.8	4.0	24.1	29.0	38	812	872	. .	. .	. .	76.0	58 3 0.2	. .	+ 1 31.6	109 10 53.0	. .
16	301 54	5.8	4.0	24.1	29.0	40	. .	. .	. .	040	110	76.0	58 3 19.9	. .	+ 1 31.6	109 11 12.7	. .
17	282 44	9.2	7.0	27.0	2.1	33	840	860	. .	. .	. .	76.0	77 11 46.7	. .	+ 4 6.6	128 22 14.5	+ 1.7
18	12 10	3.2	0.7	23.0	24.7	37	. .	. .	. .	362	312	76.0	347 46 35.9	. .	− 12.4	38 52 44.7	+17.1
19	286 12	9.9	6.6	26.8	29.7	32	. .	522	. .	450	. .	76.0	73 43 25.8	. .	+ 3 13.7	124 53 0.7	+ 3.4
20	287 30	3.0	0.0	20.6	25.5	37	. .	050	. .	108	. .	76.0	72 26 30.2	. .	+ 2 59.3	123 35 50.7	+ 4.7
21	288 20	0.3	0.0	20.6	24.9	31	620	590	. .	. .	. .	76.0	71 35 5.0	. .	+ 2 50.6	122 44 16.8	+ 6.6
22	18 26	8.9	5.8	28.1	0.5	34	912	975	. .	. .	. .	76.0	341 30 4.2	. .	− 19.2	32 36 6.2	+18.4
23	19 42	3.1	1.7	24.4	25.3	31	372	. .	. .	. .	. .	76.0	340 13 4.3	. .	− 20.7	31 19 4.8	+18.3
24	19 42	3.1	1.7	24.4	25.3	32	. .	. .	. .	. .	418	76.0	340 13 20.6	. .	− 20.7	31 19 21.1	+18.3
25	9 52	5.2	3.9	26.1	27.1	31	820	756	. .	. .	. .	76.0	350 3 12.9	. .	− 10.1	41 9 24.0	+18.5
26	14 38	10.9	8.1	2.3	4.3	32	550	. .	. .	. .	512	76.0	345 17 29.9	. .	− 15.1	36 23 36.0	+18.4
27	22 10	7.2	4.4	25.5	27.7	35	. .	. .	. .	. .	085	76.0	337 46 4.0	. .	− 23.5	28 52 1.7	+18.0
28	282 48	16.3	13.1	5.9	8.3	38	475	. .	. .	. .	480	76.0	77 9 5.3	. .	+ 4 6.8	128 19 33.3	+ 9.4
29	284 54	9.3	4.5	27.0	0.9	32	753	703	. .	. .	. .	76.0	75 1 28.6	60.5	+ 3 31.8	126 11 21.6	+11.3
30	3 54	7.0	6.7	26.4	0.4	32	. .	000	. .	008	. .	76.0	356 1 18.3	. .	− 4.0	47 7 35.5	+18.5
31	17 52	3.5	2.3	24.8	26.8	31	. .	030	. .	030	. .	76.0	342 3 1.3	. .	− 18.7	33 9 3.8	+17.6
32	313 56	7.3	3.5	26.0	0.0	37	622	. .	422	. .	100	76.0	46 0 39.4	. .	+ 59.7	97 8 0.3	. .
33	295 38	10.3	6.0	27.5	2.4	33	420	350	. .	. .	. .	76.0	64 17 40.0	. .	+ 1 59.2	115 26 0.4	+17.8
34	287 12	7.0	4.5	26.5	1.3	33	. .	. .	. .	790	760	76.0	72 43 44.8	. .	+ 3 3.2	123 53 9.2	+17.2
35	282 30	0.8	0.1	20.4	26.5	38	910	818	. .	. .	. .	76.0	77 26 56.6	. .	+ 4 13.6	128 37 31.4	+17.4
36	335 32	4.6	2.0	23.7	29.4	34	485	480	. .	. .	. .	76.0	24 23 53.0	. .	+ 26.2	75 30 40.4	− 0.4
37	302 24	4.7	2.7	23.6	28.5	37	. .	842	. .	818	. .	76.0	57 32 29.0	59.2	+ 1 30.6	108 40 20.8	− 0.3
38	345 24	11.6	8.0	3.3	6.9	35	. .	220	. .	205	. .	75.9	14 32 12.0	69.0	+ 14.7	65 38 47.9	− 1.3
39	333 38	10.3	8.7	1.8	4.8	35	. .	405	. .	390	. .	75.9	26 18 13.7	. .	+ 28.0	77 25 2.9	− 0.2
40	341 32	3.4	2.4	26.1	0.5	37	. .	560	. .	500	. .	75.9	18 24 40.6	. .	+ 18.8	69 31 20.6	+ 0.6
41	156 24	8.2	8.4	1.7	3.8	33	. .	. .	. .	210	. .	75.9	203 31 38.9	. .	+ 24.5	27 34 17.8	− 2.4
42	342 16	8.8	7.5	0.0	5.0	36	. .	900	. .	855	. .	75.9	17 40 35.4	. .	+ 17.9	68 47 14.5	+ 1.0
43	31 4	11.3	9.0	3.1	3.8	37	550	. .	. .	. .	525	75.9	328 52 47.0	. .	− 33.9	19 58 34.3	− 3.6
44	64 4	9.1	7.6	2.2	1.7	33	220	320	. .	. .	. .	75.9	295 51 38.7	. .	− 1 55.1	346 56 4.8	+ 4.3
45	336 20	8.5	9.0	1.3	5.3	37	. .	210	. .	180	. .	75.9	23 36 40.9	. .	+ 24.4	74 43 26.5	− 1.2
46	15 26	10.5	10.8	5.2	4.4	35	. .	590	. .	550	. .	75.9	344 30 18.0	. .	− 15.5	35 36 23.7	− 1.1
47	319 50	15.0	13.8	5.6	7.5	38	310	385	. .	. .	. .	75.9	40 7 3.0	. .	+ 47.1	91 14 11.3	. .
48	320 22	14.8	13.0	6.0	9.4	38	. .	. .	. .	410	520	75.9	39 35 4.8	77.0	+ 46.2	90 42 12.2	. .
49	0 2	6.5	7.2	0.8	1.7	33	. .	770	. .	750	. .	75.9	359 53 46.5	. .	− 0.1	51 0 7.6	+ 0.7
50	314 42	5.1	5.7	29.6	1.5	34	. .	685	. .	740	. .	75.9	45 13 59.7	. .	+ 56.2	96 21 17.1	. .

No.	Barom.	At. Ther.
	in.	°
3	30.30	73.8
4	30.29	68.3
26	30.30	63.4
37	30.31	63.2
38	30.33	64.5
48	30.33	72.5

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
3	− 10.7	+ 9.0	. .	− 1.7
15	− 0.8	+ 9.8	. .	+ 9.0
16	− 0.8	− 9.8	. .	− 10.6
32	−43 35.3	− 16 36.4	. .	−1 0 11.7
47	− 5.7	− 15 59.5	. .	− 16 5.2
48	− 5.6	+ 15 59.5	. .	+ 15 53.9
50	− 4.6	. .	+ 0.1	− 4.5

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Sept. 25	1	Polaris, S. P.	E.	..	..	41.0	13.0	48.0	22.0	56.0	..	..	13 48.00	+10.63	..	−38.25	1 13 20.38	+ 1.68
	2	α Virginis	E.	0.3	3.0	4.5	10.9	13.0	15.0	21.0	22.7	25.4	19 12.87	− 0.76	−38.20	−38.25	13 18 33.86	− 0.07
	3	η Ursæ Majoris	E.	..	..	7.5	10.7	13.9	17.0	20.2	..	..	43 13.86	− 1.03	..	−38.27	13 42 34.56	− 0.11
	4	η Bootis	E.	7.8	10.5	12.0	18.6	20.8	22.9	29.4	31.0	33.8	49 20.76	− 0.84	−38.20	−38.27	13 48 41.65	− 0.12
	5	α Draconis	E.	8.7	14.7	18.2	33.0	37.9	42.4	56.8	0.4	6.5	1 37.62	− 1.26	..	−38.27	14 0 58.09	− 0.04
	6	α Bootis	E.	24.2	25.8	30.2	32.4	34.6	36.7	38.9	43.2	44.8	10 34.53	− 0.85	−38.23	−38.28	14 9 55.40	− 0.05
	7	ε Bootis	E.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	8	α^2 Libræ	E.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	9	β Ursæ Minoris	E.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	10	β Bootis	E.	..	..	46.0	48.9	51.6	54.4	57.0	..	..	57 51.58	− 0.95	..	−38.30	14 57 12.33	− 0.07
	11	Venus I, N.	E.	13.9	16.9	18.5	25.0	27.2	29.4	35.9	37.7	40.3	3 27.20	− 0.73	..	−38.30	15 2 48.17	+ 0.88
	12	λ Ursæ Minoris	E.	..	..	..	..	..	..	5.0	24.0	46.5	50 46.13	−13.19	..	−38.44	19 49 54.50	− 2.47
	13	XX, 4	E.	11.0	14.1	15.9	23.0	25.6	28.0	35.2	37.0	40.0	12 25.53	− 0.67	..	−38.45	20 11 46.41	− 3.10
	14	XX, 8	E.	27.9	30.8	32.6	39.6	42.0	44.5	51.5	53.3	56.3	23 42.06	− 0.68	..	−38.45	20 23 2.93	− 3.10
	15	B. A. C. 7083	E.	13.5	17.1	19.3	28.0	31.0	34.0	42.6	44.9	48.5	26 30.99	− 0.93	..	−38.46	20 25 51.60	− 1.77
	16	XX, 11	E.	50.1	53.0	54.7	1.2	3.4	5.7	12.3	13.9	16.7	31 3.44	− 0.69	..	−38.46	20 30 24.29	− 2.91
	17	α Cygni	E.	32.2	35.8	38.0	46.6	49.5	52.3	0.8	3.2	6.7	37 49.46	− 0.92	−38.47	−38.46	20 37 10.08	+ 0.03
	18	Saturn I, N.	E.	36.4	39.0	40.8	..	..	..	58.0	59.6	2.3	42 49.35	− 0.70	..	−38.46	20 42 10.19	..
	19	Saturn II, S.	E.	..	..	46.4	48.5	50.7	53.0	55.0	..	..	42 50.72	− 0.70	..	−38.46	20 42 11.56	..
	20	XX, 18	E.	2.3	5.2	7.0	14.1	16.5	18.9	26.0	27.7	30.8	48 16.50	− 0.67	..	−38.47	20 47 37.36	− 3.24
	21	B. A. C. 7259	E.	..	..	1.7	4.5	7.5	10.4	13.3	..	..	50 7.48	− 0.92	..	−38.47	20 49 28.09	− 1.94
	22	σ^2 Ursæ Majoris, S. P.	E.	..	..	7.4	2.0	56.7	51.1	46.0	..	..	59 56.64	− 0.07	..	−38.47	8 59 18.10	− 0.45
	23	ζ Cygni	E.	1.9	4.9	6.7	13.6	16.0	18.4	25.5	27.2	30.2	8 16.04	− 0.84	−38.54	−38.48	21 7 36.72	+ 0.07
	24	α Cephei	E.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	25	β Aquarii	E.	25.4	28.0	29.5	35.5	37.6	39.7	45.8	47.4	50.0	25 37.66	− 0.73	−38.61	−38.49	21 24 58.44	+ 0.15
	26	XXI, 10	E.	40.0	43.5	45.6	53.6	56.3	58.9	7.0	9.0	12.4	31 56.24	− 0.65	..	−38.49	21 31 17.10	− 3.78
	27	B. A. C. 7548	E.	1.6	5.4	7.9	17.1	20.3	23.5	32.8	35.2	39.0	36 20.31	− 0.96	..	−38.49	21 35 40.86	− 2.18
	28	B. A. C. 7560	E.	..	..	12.6	15.9	19.2	22.5	25.6	..	..	38 19.16	− 0.97	..	−38.49	21 37 39.70	− 2.18
	29	μ Capricorni	E.	55.1	57.7	59.4	5.7	7.8	9.9	16.3	17.9	20.5	47 7.81	− 0.71	−38.53	−38.50	21 46 28.60	+ 0.06
	30	79 Draconis	E.	..	..	46.5	53.3	0.7	7.7	14.6	..	..	52 0.56	− 1.44	..	−38.50	21 51 20.62	+ 0.38
	31	α Aquarii (R.)	E.	47.7	50.3	51.8	57.9	59.9	2.0	8.0	9.7	12.2	59 59.94	+ 0.18	..	−38.50	21 59 21.62	+ 0.11
	32	B. A. C. 8213	E.	..	..	36.2	11.9	45.9	21.9	54.5	..	..	28 46.08	− 4.60	..	−38.54	23 28 2.94	−11.08
	33	ι Piscium	E.	58.3	0.8	2.5	8.4	10.5	17.7	18.7	20.3	22.9	34 10.57	− 0.76	−38.60	−38.55	23 33 31.26	+ 0.05
	34	XXIII, 16	E.	..	..	38.5	40.8	43.0	45.4	47.7	..	..	50 43.08	− 0.69	..	−38.56	23 50 2.83	− 3.43
	35	Anonymous	E.	34.0	37.4	39.3	47.0	49.5	52.2	59.9	2.0	4.9	52 49.58	− 0.66	..	−38.56	23 52 10.36	− 3.80
	36	XXIII, 20	E.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	37	Moon II	E.	44.0	46.7	48.2	54.5	56.5	58.5	4.9	6.5	9.1	30 56.54	− 0.75	..	−38.58	0 30 17.21	−69.38
	38	β Ceti	E.	45.4	48.1	49.8	56.0	58.3	0.5	7.0	8.7	11.4	37 58.36	− 0.70	−38.58	−38.58	0 37 19.08	+ 0.05
	39	B. A. C. 214	E.	3.7	6.4	8.0	14.5	16.6	18.8	25.4	26.9	29.6	41 16.66	− 0.80	..	−38.58	0 40 37.28	− 2.92
	40	B. A. C. 262	E.	..	..	56.5	22.5	49.0	15.5	41.5	..	..	52 49.00	− 3.69	..	−38.59	0 52 6.72	−12.73
	41	ε Piscium	E.	54.2	56.9	58.5	4.5	6.6	8.7	14.9	16.5	19.0	57 6.64	− 0.76	−38.59	−38.59	0 56 27.29	+ 0.02
	42	Polaris	E.	..	..	15.0	43.0	10.0	36.0	3.0	..	..	14 9.40	−10.43	..	−38.60	1 13 20.37	+ 1.53
	43	θ^1 Ceti	E.	13.5	16.1	17.7	23.9	26.0	28.1	24.2	25.8	28.5	18 25.98	− 0.72	−38.68	−38.60	1 17 46.66	+ 0.10
	44	ε Leonis	E.	9.0	11.7	13.4	20.3	22.5	24.7	31.5	33.0	35.8	39 22.43	− 0.87	−38.59	−38.73	9 38 42.83	− 0.08
	45	μ Leonis	E.	2.6	5.7	7.3	14.0	16.3	18.6	25.5	27.2	30.2	46 16.38	− 0.88	−38.70	−38.73	9 45 36.77	+ 0.05
	46	α Leonis	E.	7.5	10.1	11.7	17.9	20.0	22.1	28.3	29.9	32.4	2 19.99	− 0.84	−38.67	−38.74	10 1 40.41	− 0.11
	47	γ^1 Leonis	E.	28.9	31.7	33.3	39.8	41.9	44.1	50.6	52.2	54.8	13 41.92	− 0.86	−38.74	−38.74	10 13 2.32	− 0.02
	48	ρ Leonis	E.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	49	α Ursæ Majoris	F.	10.0	15.8	19.2	28.0	36.6	45.6	54.3	57.7	3.2	56 36.71	− 1.17	..	−38.74	10 55 56.80	+ 0.05

3, 12, 28, 30. Bisections at sets B and D.
10. Bisections at wires V and VI.
32, 40. Bisections at set C.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″	. .						″	° ′ ″	°	′ ″	° ′ ″	″
1	52 22	10 5.3	4.0	29.3	29.5	31	820	. .	785	. .	860	75.9	307 33 14.2	. .	− 1 12.4	358 38 23.0	− 0.6
2	310 34	8.7	9.2	2.0	5.2	37	. .	810	. .	800	. .	75.9	49 22 50.3	. .	+ 1 4.9	100 30 16.4	0.0
3	10 58	12.0	11.8	6.5	6.6	31	595	. .	. .	. .	580	75.9	348 57 18.2	. .	− 10.9	40 3 28.5	− 0.7
4	340 4	9.1	9.8	3.5	5.5	32	. .	820	. .	815	. .	75.9	19 51 34.8	. .	+ 20.1	70 58 16.1	+ 1.6
5	26 0	8.2	7.2	2.5	3.9	32	. .	320	. .	350	. .	75.9	333 55 26.5	. .	− 27.2	25 1 20.5	− 1.5
6	340 54	7.8	6.8	0.0	3.1	38	. .	. .	. .	795	780	75.9	19 3 4.1	. .	+ 19.2	70 9 44.5	+ 2.5
7	348 38	15.0	13.3	8.0	11.5	30	. .	735	. .	730	. .	75.9	11 17 7.9	. .	+ 11.1	62 23 40.2	+ 2.3
8	305 32	9.0	7.6	0.8	5.3	32	. .	780	. .	750	. .	75.9	54 23 32.5	. .	+ 1 17.4	105 31 11.1	+ 2.1
9	35 42	6.4	5.7	0.4	0.9	35	. .	085	. .	045	. .	75.9	324 14 6.7	. .	− 40.0	13 19 47.9	− 0.6
10	1 56	9.0	10.0	2.7	4.5	35	. .	. .	. .	870	900	75.9	358 0 21.6	. .	− 1.9	49 6 40.9	− 0.1
11	300 32	7.2	6.8	1.0	5.2	32	. .	240	. .	270	. .	75.9	59 23 24.0	79.5	+ 1 33.5	110 31 18.7	. .
12	49 56	15.8	10.7	3.5	4.5	29	. .	. .	. .	530	320	75.9	309 58 47.7	66.0	− 1 7.8	1 4 1.1	− 2.4
13	288 58	21.0	17.0	8.5	12.2	34	. .	805	. .	785	. .	75.9	70 58 12.5	. .	+ 2 43.7	122 7 17.4	− 2.8
14	290 58	12.7	7.8	1.3	5.5	33	. .	810	. .	790	. .	75.9	68 57 49.4	. .	+ 2 27.1	120 6 37.7	− 1.2
15	6 32	11.4	10.	0.7	2.5	32	. .	110	. .	120	. .	75.9	353 23 23.5	. .	− 6.6	44 29 38.1	+16.8
16	298 12	15.7	10.8	1.9	7.1	36	. .	870	. .	865	. .	75.9	61 44 38.5	. .	+ 1 45.7	112 52 45.4	+ 1.6
17	5 52	11.8	8.0	0.2	1.1	32	. .	950	. .	910	. .	75.9	354 3 35.1	. .	− 5.9	45 9 50.4	− 1.1
18	301 52	6.5	4.5	25.8	29.6	32	815	. .	. .	. .	760	75.9	58 3 28.7	. .	+ 1 31.3	109 11 21.2	. .
19	301 52	6.5	4.5	25.8	29.6	33	. .	890	. .	850	. .	75.9	58 3 45.4	. .	+ 1 31.3	109 11 37.9	. .
20	290 28	17.8	13.3	5.3	9.0	34	. .	520	. .	510	. .	75.9	69 28 4.9	. .	+ 2 31.2	120 36 57.3	+ 0.8
21	4 56	15.1	12.2	5.3	6.2	29	. .	. .	. .	960	880	75.9	354 58 54.0	. .	− 5.0	46 5 10.2	+17.3
22	73 22	10.9	4.4	27.7	1.7	39	380	. .	. .	. .	440	75.9	286 35 12.4	. .	− 3 9.2	337 38 24.4	+ 0.7
23	350 46	17.5	13.6	5.0	8.0	36	. .	340	. .	285	. .	75.9	9 10 32.5	. .	+ 9.4	60 17 3.1	− 0.3
24	23 6	15.4	11.6	5.0	7.8	36	. .	555	. .	550	. .	75.9	336 50 35.5	64.0	− 24.4	27 56 32.3	− 2.9
25	314 56	20.7	16.5	8.5	12.7	33	. .	855	. .	815	. .	75.9	44 59 57.9	. .	+ 57.1	96 7 16.2	+ 0.2
26	281 2	16.2	10.4	4.3	6.6	36	. .	620	. .	520	. .	75.9	78 54 34.3	. .	+ 4 43.2	130 5 38.7	+ 2.3
27	10 8	18.0	14.5	7.3	11.0	29	320	315	. .	. .	. .	75.9	349 46 47.1	. .	− 10.3	40 52 58.0	+18.5
28	11 40	13.0	9.5	2.2	4.1	36	785	. .	. .	. .	820	75.9	348 16 36.1	. .	− 11.9	39 22 45.4	+18.5
29	306 56	9.8	6.1	27.5	3.3	37	. .	885	. .	870	. .	75.9	53 0 49.4	. .	+ 1 15.8	104 8 26.4	+ 0.5
30	34 8	15.0	11.0	5.0	4.3	32	765	. .	. .	. .	740	75.9	325 47 36.1	. .	− 38.9	16 53 18.4	− 1.5
31	219 44	11.4	6.6	29.5	0.5	32	655	575	. .	600	640	75.9	140 11 29.2	. .	− 47.7	90 55 39.7	+ 2.0
32	47 38	15.4	12.6	5.0	6.2	33	110	. .	. .	. .	070	75.9	312 17 41.9	. .	− 1 3.0	3 23 0.1	+14.3
33	326 0	14.1	10.3	1.3	4.3	34	. .	700	. .	615	. .	75.9	33 56 3.5	. .	+ 38.6	84 3 3.3	− 0.8
34	295 38	15.0	10.1	3.7	8.0	33	125	120	. .	. .	. .	75.9	64 17 41.0	. .	+ 1 58.7	115 26 0.9	+17.7
35	283 32	11.8	9.0	2.0	5.3	35	. .	220	. .	205	. .	75.9	76 24 11.2	. .	+ 3 52.8	127 34 25.2	+16.6
36	282 30	17.3	14.6	7.3	9.8	38	020	000	. .	. .	. .	75.9	77 26 58.7	. .	+ 4 12.0	128 37 31.9	+17.3
37	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .		. .	. .		. .
38	302 24	14.5	10.9	2.4	7.0	36	. .	530	. .	475	. .	75.9	57 32 32.8	. .	+ 1 30.1	108 40 24.1	+ 3.1
39	339 56	13.2	10.3	0.5	3.5	32	. .	760	. .	720	. .	75.9	19 59 33.6	. .	+ 20.9	71 6 15.7	+19.8
40	46 36	13.8	10.3	6.4	7.5	32	900	. .	885	. .	890	75.9	313 19 38.5	. .	− 1 0.9	4 24 58.8	+10.6
41	328 16	16.5	14.5	6.3	8.7	34	. .	200	. .	190	. .	75.9	31 40 0.4	. .	+ 35.5	82 46 57.1	− 1.0
42	49 40	11.3	7.4	0.6	2.5	36	030	. .	050	. .	100	75.9	310 16 23.1	60.0	− 1 7.8	1 21 36.5	+ 0.3
43	312 14	19.0	15.4	6.8	12.2	35	. .	110	. .	055	. .	75.9	47 42 15.7	. .	+ 1 3.2	98 49 40.0	+ 0.8
44	345 24	8.8	3.6	25.9	0.7	35	. .	566	. .	590	. .	75.0	14 32 11.5	. .	+ 14.7	65 38 47.4	− 1.9
45	347 36	19.8	15.9	7.3	12.2	32	. .	. .	. .	025	037	75.0	12 17 29.2	68.6	+ 12.3	63 24 2.7	− 2.0
46	333 38	8.7	5.8	27.3	2.0	35	. .	586	. .	562	. .	75.0	26 18 12.6	. .	+ 27.9	77 25 1.7	− 1.5
47	341 32	3.0	0.6	22.2	28.0	37	. .	698	. .	686	. .	75.0	18 24 40.1	. .	+ 18.8	69 31 20.1	− 0.1
48	331 0	9 29.5	26.9	18.5	24.3	34	. .	. .	. .	657	. .	75.0	28 55 50.2	. .	+ 31.1	80 2 42.5	− 2.3
49	23 28	10 8.8	6.2	29.5	2.5	36	. .	080	. .	992	. .	75.0	336 28 21.0	74.1	− 24.4	27 34 17.8	− 2.8

No.	Barom.	At. Ther.
	in.	°
11	30.28	76.0
12	30.29	69.0
24	30.26	67.0
42	30.23	62.5
45	30.22	65.0
49	30.21	69.5

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
11	− 10.8	+ 12.2	. .	+ 1.4
18	− 0.8	+ 8.4	. .	+ 7.6
19	− 0.8	− 8.4	. .	− 9.2

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.	
1874.													m. s.	s.	s.	s.	h. m. s.	s.	
Sept. 26	1	Sun I, S.	F.	55.6	58.1	59.6	5.7	7.7	9.8	16.0	17.5	20.0	12 7.78	− 0.81	. .	−38.79	12 11 28.18	. .	
	2	Sun II, N.	F.	6.2	7.9	12.0	14.0	16.0	18.0	20.2	24.3	25.9	14 16.06	− 0.81	. .	−38.79	12 13 36.46	. .	
	3	12 Canum Venat.	F.	32.3	36.0	37.8	45.6	48.3	50.9	58.6	0.6	3.9	50 48.22	− 0.94	−38.93	−38.81	12 50 8.47	+ 0.12	
	4	Mercury I, C.	F.	21.9	24.5	26.0	32.0	34.2	36.3	42.4	44.0	46.6	5 34.21	− 0.79	. .	−38.82	13 4 54.62	+ 0.17	
	5	Polaris, S. P.	F.	. .	. .	43.0	16.0	50.0	25.0	56.0	. .	. .	13 50.00	+ 9.30	. .	−38.83	1 13 20.47	+ 1.47	
	6	α Virginis	F.	0.9	3.6	5.0	11.4	13.6	15.7	21.8	23.3	25.9	19 13.47	− 0.79	−38.77	−38.83	13 18 33.85	− 0.08	
	7	ζ Virginis	F.	44.3	46.9	52.7	54.6	56.6	58.7	0.8	6.4	8.9	28 56.66	− 0.81	−38.84	−38.83	13 28 17.02	+ 0.01	
	8	η Ursæ Majoris	F.	55.6	59.5	1.7	11.5	14.6	17.7	27.5	29.9	33.6	43 14.62	− 1.02	. .	−38.84	13 42 34.76	+ 0.10	
	9	η Bootis	F.	8.4	11.2	12.7	19.2	21.4	23 5	30.0	31.6	34.2	49 21.36	− 0.85	−38.80	−35.84	13 48 41.67	− 0.09	
	10	α Draconis	F.	9.0	15.3	19.3	33.6	38.5	43.0	57.9	1.2	7.3	1 58.34	− 1.22	. .	−38.84	14 0 58.28	+ 0.17	
	11	α Bootis	F.	22.2	24.9	26.5	32.9	35.1	37.3	43.9	45.4	48.0	10 35.13	− 0.86	−38.82	−38.85	14 9 55.42	− 0.03	
	12	θ Bootis	F.	14.3	18.6	21.2	31.2	34.5	37.8	47.8	50.4	54.6	21 34.49	− 1.04	. .	−38.85	14 20 54.60	+ 0.16	
	13	ε Bootis	F.	55.5	58.4	0.1	7.0	9.5	11.6	18.6	20.3	23.3	40 9.37	− 0.88	−38.82	−38.86	14 39 29.63	− 0.06	
	14	α^2 Libræ	F.	22.3	25.0	26.6	33.0	35.0	37.2	43.5	45.0	47.7	44 35.03	− 0.78	−38.89	−38.86	14 43 55.39	+ 0.02	
	15	β Ursæ Minoris	F.	. .	. .	28.7	36.4	44.6	51.0	59.5	. .	. .	51 44.04	− 1.57	. .	−38.87	14 51 3.60	+ 0.24	
	16	β Bootis	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	
	17	Venus I, N.	F.	15.1	17.9	19.6	26.0	28.3	30.5	37.0	38.7	41.6	7 28.30	− 0.77	. .	−38.87	15 6 48.66	+ 0.90	
	18	Venus S.	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	
	19	β Libræ	F.	41.8	44.4	45.9	52.2	54.3	56.3	2.5	4.0	6.7	10 54.23	− 0.79	−38.85	−38.87	15 10 14.57	− 0.02	
	20	μ^1 Bootis	F.	8.7	11.8	13.8	21.6	24.2	26.7	34.6	36.6	39.7	20 24.19	− 0.93	−38.88	−38.88	15 19 44.38	− 0.01	
	21	γ^2 Ursæ Minoris	F.	. .	. .	. .	. .	42.4	48.7	2.4	7.5	15.5	21 35.50	− 1.46	. .	−38.88	15 20 55.16	+ 0.29	
	22	α Coronæ Borealis	F.	48.0	50.9	52.5	59.3	1.7	4.0	10.9	12.5	15.4	30 1.69	− 0.88	−38.89	−38.88	15 29 21.93	+ 0.01	
	23	α Serpentis	F.	32.0	34.6	36.2	42.4	44.5	46.4	52.7	54.2	56.8	38 44.42	− 0.82	−38.90	−38.89	15 38 4.71	+ 0.03	
	24	λ Ursæ Minoris	F.	. .	. .	8.0	57.0	46.0	34.5	24.0	. .	. .	50 45.90	−11.38	. .	−39.00	19 49 55.52	− 0.31	
	25	τ Aquilæ	F.	28.8	31.4	32 8	39.0	41.0	43.1	19.3	51.0	53.4	58 41.09	− 0.78	−39.03	−39.00	19 58 1.31	+ 0.05	
	26	B. A. C. 6959	F.	23.5	27.6	30.0	39.6	43.0	46.2	56.1	58.5	2.5	9 43.00	− 0.95	. .	−39.01	20 9 3.04	− 1.52	
	27	B. A. C. 6990	F.	. .	. .	45.0	47.7	50.4	52.9	55.5	. .	. .	13 50.30	− 0.87	. .	−39.01	20 13 10.42	− 1.80	
	28	π Capricorni	F.	36.0	38.8	40.3	46.8	49.0	51.1	57.6	59.3	1.9	20 48.98	− 0.74	−39.02	−39.01	20 20 9.23	+ 0.04	
	29	XX, 9	F.	. .	. .	51.7	54.0	56.4	58.8	1.1	. .	. .	23 56.40	− 0.72	. .	−39.02	20 23 16.66	− 3.07	
	30	B. A. C. 7083	F.	. .	. .	25.8	28.7	31.6	34.5	37.2	. .	. .	26 31.56	− 0.91	. .	−39.02	20 25 51.63	− 1.74	
	31	B. A. C. 7169	F.	. .	. .	56.9	10.0	23.0	36.2	49.5	. .	. .	35 23.12	− 1.94	. .	−39.02	20 34 42.16	− 0.23	
	32	B. A. C. 7178	F.	. .	. .	18.2	30.9	45.0	57.7	11.1	. .	. .	36 44.58	− 1.94	. .	−39.02	20 36 3.62	− 0.27	
	33	α Cygni	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
	34	Saturn I, N.	F.	. .	. .	. .	41.6	43.7	45.8	48.0	. .	. .	12 43.68	− 0.74	. .	−39.02	20 42 3.92	. .	
	35	Saturn II, S.	F.	. .	. .	. .	. .	. .	. .	53.7	55.3	58.0	42 45.03	− 0.74	. .	−39.02	20 42 5.27	. .	
	36	XX, 18	F.	. .	. .	14.5	17.0	19.5	21.8	36.5	28.2	31.1	48 16.98	− 0.72	. .	−39.02	20 47 37.24	− 3.22	
	37	σ^2 Ursæ Majoris, S. P.	F.	30.3	23.2	19.0	3.0	57.7	52.3	36.2	32.2	25.5	59 57.71	− 0.16	. .	−39.03	8 59 18.52	− 0.09	
	38	ζ Cygni	F.	2.5	5.4	7.4	14.3	16.6	18.9	25.9	27.7	30.7	8 16.60	− 0.84	−39.12	−39.03	21 7 36.73	+ 0.10	
	39	α Cephei	F.	. .	. .	7.9	12.0	16.3	20.8	25.0	. .	. .	16 16.40	− 1.07	. .	−39.04	21 15 36.29	+ 0.14	
	40	1 Draconis, S. P.	F.	. .	. .	5.6	51.0	36.8	22.2	8.4	. .	. .	19 36.80	− 0.69	. .	−39.04	9 18 57.07	− 1.78	
	41	δ Ursæ Majoris, S. P.	F.	. .	. .	11.4	5.0	58.9	52.8	46.7	. .	. .	23 58.96	− 0.08	. .	−39.04	9 23 19.84	+ 0.07	
	42	β Aquarii	F.	28.5	30.0	34.0	36.1	38.1	40.2	42.2	46.4	48.0	25 38.17	− 0.75	−39.11	−39.04	21 24 58.38	+ 0.10	
	43	XXI, 12	F.	16.7	19.6	21.3	28.0	30.4	32.8	39.6	41.5	44.4	32 30.48	− 0.72	. .	−39.04	21 31 50.72	− 3.32	
	44	B. A. C. 7555	F.	54.4	58.7	1.2	11.8	15.3	18.7	29.3	31.8	36.3	37 15.28	− 0.98	. .	−39.04	21 36 35.26	− 2.13	
	45	μ Capricorni	F.	. .	. .	4.2	6.2	8.3	10.4	12.5	. .	. .	46 8.32	− 0.74	−39.02	−39.05	21 46 28.53	0.00	
	46	79 Draconis	F.	. .	. .	46.9	53.5	0.6	7.5	14.7	. .	. .	52 0.64	− 1.34	. .	−39.05	21 51 20.25	+ 0.05	
	47	α Aquarii	F.	49.1	51.7	53.2	59.0	1.3	3.5	9.5	11.0	13.7	0 1.34	− 0.76	−39.04	−39.05	21 59 21.53	+ 0.02	
	48	B. A. C. 7712	F.	24.5	27.2	28.8	35.3	37.5	39.7	46.4	48.0	50.9	2 37.59	− 0.81	. .	−39.06	22 1 57.72	− 2.54	
	49	B. A. C. 7820	F.	48.5	52.5	54.8	4.2	7.2	10.3	19.6	21.9	25.9	20 7.21	− 0.93	. .	−39.06	22 19 27.22	− 2.45	

15, 21, 37, 46. Bisections at sets B and D.
21. Telescope micrometer reading decreased five revolutions in reduction.
48. Telescope micrometer reading decreased one revolution in reduction.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	319 26	9 20.6	19.7	10.9	19.6	37	456	442	. .	. .	. .	75.0	40 30 25.6	. .	+ 47.4	91 37 34.2	. .
2	319 58	14.0	12.1	4.0	11.9	38	. .	. .	. .	036	102	75.0	39 58 27.6	78.0	+ 46.5	91 5 35.3	. .
3	0 2	10 2.5	3.0	26.1	2.9	34	. .	. .	. .	008	924	75.0	359 53 46.3	. .	− 0.1	51 0 7.4	+ 0.3
4	314 0	9 29.2	2.5	24.8	29.8	39	000	996	. .	016	034	75.0	45 57 0.7	. .	+ 57.1	97 4 19.0	. .
5	52 22	29.2	26.8	20.2	29.0	32	332	322	290	300	425	75.0	307 33 15.6	. .	− 1 11.7	358 38 25.1	− 1.2
6	310 34	10 4.1	4.5	25.5	1.7	38	. .	. .	. .	112	128	75.0	49 22 49.8	80.2	+ 1 4.2	100 30 15.2	− 1.2
7	321 6	5.6	6.3	28.4	3.4	34	. .	. .	. .	930	908	75.0	38 50 2.8	. .	+ 44.4	89 57 8.4	+ 0.4
8	10 58	1.4	0.6	24.0	26.5	32	. .	394	. .	350	. .	75.0	348 57 18.5	. .	− 10.8	40 3 28.9	− 0.6
9	340 4	6.1	5.6	2.9	1.2	33	. .	066	. .	062	. .	75.0	19 51 34.7	. .	+ 19.9	70 58 15.8	+ 1.2
10	26 0	6.4	5.2	27.7	3.0	32	. .	. .	. .	400	232	75.0	333 55 24.2	. .	− 27.0	25 1 18.4	− 4.0
11	340 54	9 29.0	25.6	17.5	26.0	39	. .	474	. .	486	. .	75.0	19 3 3.5	. .	+ 19.0	70 9 43.7	+ 1.6
12	13 28	10 12.4	10.7	4.0	6.7	33	. .	812	. .	806	. .	75.0	346 27 50.9	81.8	− 13.3	37 33 58.8	− 0.8
13	348 38	9 26.1	25.3	16.7	22.3	31	. .	880	. .	888	. .	75.0	11 17 5.3	. .	+ 11.0	62 23 37.5	− 0.5
14	305 32	10 1.9	0.0	25.0	0.5	33	. .	. .	. .	190	110	75.0	54 23 31.1	. .	+ 1 16.6	105 31 8.9	0.0
15	35 42	6.7	4.5	27.4	29.8	35	. .	138	. .	088	. .	75.0	321 14 4.4	. .	− 39.6	15 19 46.0	− 2.8
16	1 56	9 28.6	29.5	20.0	25.3	36	. .	522	. .	534	. .	75.0	358 0 19.8	. .	− 1.9	49 6 39.1	− 2.1
17	300 12	10 3.1	3.4	27.1	2.0	36	732	.	. .	. .	728	75.0	59 44 27.9	. .	+ 1 33.9	110 52 23.0	. .
18	300 12	3.1	3.4	27.1	2.0	38	. .	256	. .	248	. .	75.0	59 44 51.3	82.4	+ 1 33.9	110 52 46.4	. .
19	312 8	15.5	15.0	6.5	12.0	33	. .	. .	. .	154	170	75.0	47 47 44.3	. .	+ 1 0.4	98 55 5.9	− 0.3
20	358 52	6.7	7.1	2.6	5.3	36	248	238	. .	. .	. .	75.0	1 4 24.8	. .	+ 0.1	52 10 46.1	− 0.1
21	33 18	5.0	2.3	25.4	27.0	37	. .	. .	. .	150	136	75.0	326 37 16.7	. .	− 36.2	17 43 1.7	+ 0.1
22	348 12	7.0	6.5	27.9	1.9	38	. .	884	. .	880	. .	75.0	11 45 3.2	. .	+ 11.4	62 51 35.8	+ 0.5
23	327 52	9 24.2	24.0	17.5	22.6	34	. .	336	. .	310	. .	75.0	32 3 42.0	81.2	+ 34.5	83 10 37.7	− 0.4
24	49 56	10 10.7	6.9	27.8	1.2	29	886	876	856	886	886	75.9	309 58 47.1	68.0	− 1 7.2	1 4 1.1	− 2.3
25	327 58	4.7	29.8	28.2	29.3	32	. .	926	. .	912	. .	75.9	31 57 23.8	. .	+ 35.2	83 4 26.2	+ 1.5
26	12 8	16.1	13.1	5.2	7.8	35	. .	970	. .	986	. .	75.9	347 48 27.1	. .	− 12.2	38 54 36.1	+16.8
27	358 42	23.3	20.7	13.2	16.2	36	. .	. .	. .	908	906	75.9	1 14 49.5	. .	+ 1.2	52 21 11.9	+15.5
28	302 26	13.8	9.0	0.0	6.0	32	. .	508	. .	492	. .	75.9	57 29 30.0	. .	+ 1 28.5	108 37 19.7	− 0.2
29	291 32	13.9	10.7	1.5	6.0	31	. .	. .	. .	590	594	75.9	68 23 17.1	. .	+ 2 21.7	119 32 0.0	− 1.1
30	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
31	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
32	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
33	5 52	15.2	11.4	3.7	5.5	32	. .	. .	. .	. .	590	75.9	354 3 34.4	. .	− 5.9	45 9 49.7	− 1.7
34	301 52	7.0	3.0	24.5	0.3	34	. .	. .	. .	422	. .	75.9	58 3 53.7	. .	+ 1 30.6	109 11 45.5	. .
35	301 52	7.0	3.0	24.5	0.3	35	. .	. .	. .	. .	490	75.9	58 4 10.0	. .	+ 1 30.6	109 12 1.8	. .
36	290 28	15.6	9.6	0.2	6.1	34	902	890	. .	. .	. .	75.9	69 23 6.8	. .	+ 2 30.1	120 36 58.1	− 0.7
37	73 22	7.2	0.4	20.1	26.5	39	698	. .	. .	. .	718	75.9	286 35 11.6	65.2	− 3 8.2	337 38 24.6	+ 1.2
38	350 46	13.7	9.7	29.3	3.7	36	. .	662	. .	630	. .	75.9	9 10 33.5	. .	+ 9.2	60 17 3.9	+ 0.7
39	23 6	9.0	6.1	27.5	0.2	36	. .	910	960	. .	. .	75.9	336 50 34.1	. .	− 24.3	27 56 31.0	− 3.9
40	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
41	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
42	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
43	293 12	9.8	5.8	26.2	2.8	33	. .	018	. .	988	. .	75.9	66 43 34.0	. .	+ 2 11.2	117 52 6.4	+ 5.4
44	15 20	7.2	2.8	24.5	27.2	33	. .	288	. .	302	. .	75.9	344 35 35.9	. .	− 15.7	35 41 41.4	+18.8
45	306 56	9.9	5.4	27.2	3.6	37	. .	998	. .	966	. .	75.9	53 0 50.7	. .	+ 1 15.3	104 8 27.2	+ 1.2
46	34 8	16.0	10.6	3.4	5.4	32	. .	706	. .	702	. .	75.9	325 47 35.1	. .	− 38.6	16 53 17.7	− 1.9
47	320 8	14.1	7.9	28.5	5.2	36	. .	358	. .	390	. .	75.9	39 48 28.6	. .	+ 47.4	90 55 37.2	− 0.5
48	342 8	16.6	13.4	3.5	9.7	33	. .	. .	. .	670	670	75.9	17 47 36.8	64.0	+ 18.3	68 54 16.3	+17.1
49	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .

No.	Barom.	At. Ther.
	in.	°
2	30.19	72.2
6	30.17	85.5
12	30.18	77.0
16	30.15	77.5
23	30.14	77.0
24	30.12	71.0
37	30.12	68.5
48	30.11	67.5

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
1	− 5.8	− 15 59.4	. .	− 16 5.2
2	− 5.7	+ 15 59.4	. .	+ 15 53.7
4	− 4.7	. .	+ 0.1	− 4.6
17	− 11.0	+ 12.0	. .	+ 1.0
18	− 11.0	− 12.0	+ 0.6	− 22.4
34	− 0.8	+ 8.2	. .	+ 7.4
35	− 0.8	− 8.2	. .	− 9.0

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.		IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Sept. 26	1	XXII, 9	F.	6.9	10.0	12.2	20.2	22.9	25.6	33.4	35.4	38.8	32 22.82	— 0.71	. .	—39.07	22 31 43.04	— 3.91
	2	XXII, 11	F.	18.8	22.2	24.1	32.0	34.6	37.0	45.0	47.0	50.2	36 34.54	— 0.71	. .	—39.07	22 35 54.76	— 3.86
	3	XXII, 12	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	4	ι Cephei	F.	25.6	31.7	35.4	50.0	55.0	59.9	15.0	18.6	24.6	45 55.09	— 1.13	. .	—39.08	22 45 14.88	+ 0.20
	5	α Piscis Australis	F.	10.3	13.2	15.0	22.0	24.6	26.9	34.0	35.7	38.6	51 24.48	— 0.72	—39.09	—39.08	22 50 44.68	+ 0.05
	6	α Pegasi	F.	59.1	1.9	3.5	9.6	11.8	13.9	20.1	21.9	24.4	59 11.80	— 0.79	—39.07	—39.08	22 58 31.93	+ 0.02
	7	o Cephei	F.	39.1	45.8	49.8	5.9	11.2	16.5	22.4	36.2	43.3	14 11.13	— 1.16	. .	—39.09	23 13 30.88	+ 0.09
	8	B. A. C. 8213	F.	. .	. .	36.8	10.0	45.4	20.8	55.0	. .	. .	28 45.60	— 4.03	. .	—39.09	23 28 2.48	—11.00
	9	Groombridge 4163	F.	. .	. .	13.3	20.4	27.8	35.2	42.5	. .	. .	49 27.84	— 1.36	. .	—39.10	23 48 47.38	— 0.19
	10	XXIII, 20	F.	11.5	14.8	16.7	24.6	27.1	29.8	37.5	39.6	43.0	1 27.18	— 0.71	. .	—39.11	0 0 47.36	— 3.82
	11	γ Pegasi	F.	15.2	17.9	19.3	25.7	27.9	30.0	36.2	37.8	40.4	7 27.82	— 0.80	—39.16	—39.11	0 6 47.91	+ 0.05
	12	ε Piscium	F.	54.9	57.6	59.0	5.1	7.2	9.2	15.3	17.0	19.5	57 7.20	— 0.77	—39.13	—39.14	0 56 27.29	+ 0.01
	13	Polaris	F.	. .	. .	. .	43.0	8.0	37.0	1.0	. .	. .	14 9.05	— 9.07	. .	—39.14	1 13 20.84	+ 1.67
	14	θ^1 Ceti	F.	14.0	16.7	18.2	24.4	26.5	28.6	34.9	36.4	39.0	18 26.52	— 0.75	—39.18	—39.14	1 17 46.63	+ 0.06
	15	Moon II	F.	41.6	44.3	45.9	52.3	54.3	56.3	2.6	4.2	6.8	26 54.26	— 0.78	. .	—39.15	1 26 14.33	—70.21
	16	o Piscium	F.	15.0	17.6	19.2	25.3	27.4	29.5	35.6	37.0	39.7	39 27.37	— 0.78	—39.13	—39.16	1 38 47.43	— 0.06
	17	β Arietis	F.	10.7	13.5	15.0	21.7	23.8	26.0	32.6	34.0	37.0	48 23.81	— 0.82	—39.09	—39.16	1 47 43.83	— 0.05
	18	I, 5	F.	. .	. .	. .	9.4	11.8	14.0	18.4	20.0	22.9	50 9.36	— 0.73	. .	—39.16	1 49 29.47	— 3.12
	19	50 Cassiopeæ	F.	49.0	57.4	2.2	22.0	28.9	35.3	54.7	0.2	7.8	53 28.61	— 1.29	. .	—39.16	1 52 48.16	+ 0.29
	20	α Arietis	F.	34.0	36.9	38.5	45.2	47.5	49.7	56.4	57.9	0.5	0 47.40	— 0.82	—39.19	—39.16	2 0 7.42	+ 0.04
30	21	Moon II	F.	19.8	22.7	24.6	31.6	33.9	36.3	43.5	45.3	48.2	32 33.99	— 0.78	. .	—41.88	5 31 51.33	—75.50
	22	α Orionis	F.	. .	. .	1.8	3.9	6.0	8.0	10.1	. .	. .	49 5.96	— 0.88	—41.90	—41.90	5 48 23.18	— 0.03
	23	22 Camelopardalis	F.	9.3	16.9	20.8	38.2	44.0	49.8	7.3	11.5	18.9	5 44.08	— 0.26	. .	—41.90	6 5 1.92	+ 0.24
	24	δ Ursæ Minoris, S. P.	F.	. .	. .	40.0	5.0	31.0	57.5	23.5	. .	. .	13 31.40	— 4.83	. .	—41.90	18 12 44.67	— 0.10
	25	μ Geminorum	F.	51.9	54.7	56.4	2.9	5.2	7.5	14.0	15.8	18.5	16 5.21	— 0.80	—41.90	—41.90	6 15 22.51	— 0.04
	26	γ Geminorum	F.	. .	. .	6.4	8.5	10.7	12.8	15.0	. .	. .	31 10.68	— 0.84	—41.80	—41.91	6 30 27.93	— 0.14
	27	α Canis Majoris	F.	7.0	9.9	11.8	17.8	19.9	22.0	28.4	30.0	32.8	40 19.96	— 0.99	—41.93	—41.91	6 39 37.06	— 0.06
	28	51 Cephei	F.	. .	. .	. .	. .	21.0	7.0	30.0	3.0	56.3	41 41.32	+ 3.98	. .	—41.91	6 41 3.39	+ 0.12
	29	ε Canis Majoris	F.	10.5	13.5	15.4	22.2	24.6	27.0	33.9	35.7	38.9	54 24.63	— 1.06	—41.92	—41.92	6 53 41.65	— 0.05
	30	δ Canis Majoris	F.	46.7	49.5	51.3	57.9	0.3	2.6	9.3	11.0	13.9	4 0.28	— 1.05	—41.95	—41.92	7 3 17.31	— 0.02
	31	δ Geminorum	F.	7.3	9.9	11.7	18.3	20.4	22.6	29.2	30.8	33.7	13 20.43	— 0.86	—41.89	—41.93	7 12 37.70	— 0.10
	32	a^2 Geminorum	F.	3.7	8.5	13.4	15.7	18.3	20.6	23.0	27.9	32.5	27 18.18	— 0.75	—41.95	—41.93	7 26 35.50	+ 0.20
	33	α Canis Minoris	F.	14.4	16.9	18.4	24.6	26.7	28.7	34.8	36.4	38.9	33 26.64	— 0.88	—41.96	—41.94	7 32 43.82	— 0.14
	34	β Geminorum	F.	6.8	9.9	11.6	18.5	20.8	23.2	30.1	31.8	34.8	38 20.83	— 0.77	—41.97	—41.94	7 37 38.12	0.00
	35	ε Leonis	S.	12.2	15.0	16.6	23.5	25.7	27.9	34.7	36.4	39.1	39 25.68	— 0.77	—41.94	—41.99	9 38 42.92	— 0.11
	36	α Leonis (R.)	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	37	γ^1 Leonis	S.	32.2	35.0	36.5	. .	. .	. .	53.9	55.5	58.3	13 45.23	— 0.79	—42.02	—42.02	10 13 2.42	— 0.02
	38	γ^2 Leonis	S.	. .	. .	41.2	43.3	45.5	47.7	49.9	. .	. .	13 45.52	— 0.79	. .	—42.02	10 13 2.71	+ 0.27
	39	δ Leonis	S.	55.0	57.5	59.2	5.9	8.0	10.3	16.8	18.5	21.0	8 8.02	— 0.79	—42.08	—42.06	11 7 25.17	— 0.04
Oct. 1	40	Sun I.	S.	2.3	5.0	6.6	12.6	14.4	16.6	22.6	24.4	26.9	30 14.60	— 0.90	. .	—42.12	12 29 31.58	. .
	41	Sun II.	S.	11.2	13.6	15.1	21.3	23.4	25.4	31.5	33.1	35.7	32 23.37	— 0.90	. .	—42.12	12 31 40.35	. .
	42	Polaris, S. P.	S.	. .	. .	7.5	40.5	13.5	46.5	. .	. .	. .	14 13.98	— 9.38	. .	—42.14	1 13 22.46	+ 1.72
	43	Mercury I, N.	S.	25.1	27.6	29.2	. .	. .	. .	45.9	47.5	50.2	33 37.58	— 0.93	. .	—42.15	13 32 54.50	+ 0.23
	44	Mercury II, S.	S.	. .	. .	33.8	35.9	38.0	40.0	42.1	. .	. .	33 37.96	— 0.93	. .	—42.15	13 32 54.88	— 0.15
	45	η Ursæ Majoris	S.	. .	4.8	11.0	14.2	17.3	20.5	23.7	30.0	. .	43 17.36	— 0.61	. .	—42.16	13 42 34.59	— 0.03
	46	η Bootis	S.	11.6	14.4	16.0	22.4	24.6	26.7	33.3	34.8	37.5	49 24.59	— 0.80	—42.09	—42.16	13 48 41.63	— 0.12
	47	α Draconis	S.	17.7	21.4	30.8	35.8	10.5	45.3	50.2	59.8	3.6	1 40.57	— 0.40	. .	—42.17	14 0 58.00	— 0.01
	48	α Bootis (R.)	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	49	θ Bootis	S.	. .	. .	30.4	34.0	37.4	40.6	44.0	. .	. .	21 37.28	— 0.59	. .	—42.18	14 20 54.51	+ 0.15
	50	Venus I, N.	S.	3.5	6.0	7.8	24.5	26.7	29.0	35.8	37.4	39.9	27 26.73	— 0.99	. .	—42.22	15 26 43.52	+ 1.00

3. Telescope micrometer reading decreased five revolutions in reduction.
4, 8, 9, 19, 23, 45, 47, 49. Bisections at sets B and D.
48. Bisections at wires I, III, V, and VII.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	231 20	10 7.0	0.5	23.4	29.9	40	760	755	. .	. .	. .	75.9	78 37 28.7	. .	+ 4 34.8	129 48 24.7	+ 8.4
2	282 48	6.5	2.8	24.2	0.8	39	. .	500	. .	376	. .	75.9	77 9 9.9	. .	+ 4 4.0	128 19 35.1	+ 9.1
3	295 10	6.5	2.3	22.5	29.2	37	. .	. .	. .	376	428	75.9	64 45 21.6	. .	+ 2 0.0	115 53 42.8	+11.7
4	20 36	11.4	8.1	29.8	3.9	40	. .	. .	. .	362	380	75.9	333 21 29.4	. .	− 28.5	24 27 22.1	− 3.3
5	200 46	11.2	5.7	28.5	3.7	28	. .	186	. .	164	. .	75.9	69 8 21.2	. .	+ 2 28.1	120 17 10.5	+ 1.1
6	335 34	9.4	3.2	24.8	0.2	31	. .	860	. .	856	. .	75.9	24 21 15.0	. .	+ 25.8	75 28 2.0	+ 1.3
7	25 28	20.9	16.0	8.0	11.2	35	. .	934	. .	910	. .	75.9	331 28 30.1	63.4	− 30.9	22 34 20.4	− 3.2
8	47 38	6.3	1.5	22.2	28.5	33	. .	620	. .	644	. .	75.9	312 17 40.4	. .	− 1 2.5	3 22 59.1	+14.7
9	34 44	11.2	4.8	27.0	0.8	32	. .	. .	. .	640	646	75.9	325 11 28.8	. .	− 39.6	16 17 10.4	− 1.8
10	282 30	9.6	2.9	23.9	29.5	38	930	920	. .	. .	. .	75.9	77 27 2.0	. .	+ 4 9.9	128 37 33.1	+17.4
11	335 32	12.6	8.0	29.0	4.0	34	. .	. .	. .	086	080	75.9	24 23 53.5	. .	+ 25.8	75 30 40.5	− 0.1
12	325 16	15.2	9.9	1.5	6.2	34	. .	415	. .	425	. .	75.9	31 40 0.5	. .	+ 35.2	82 46 56.9	− 1.1
13	49 40	11.4	3.7	2.9	1.9	36	. .	072	065	074	. .	75.9	310 16 22.6	. .	− 1 7.2	1 21 36.6	+ 0.7
14	312 14	11.2	5.6	27.4	4.5	35	. .	682	. .	682	. .	75.9	47 42 16.2	. .	+ 1 2.6	98 49 40.0	+ 0.7
15	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
16	329 34	7.5	2.8	23.1	0.0	32	. .	308	. .	294	. .	75.9	30 21 20.7	61.6	+ 33.4	81 28 15.3	− 1.4
17	341 14	11.5	5.7	27.0	3.8	32	. .	720	. .	720	. .	75.9	18 41 30.8	. .	+ 19.3	69 48 11.3	− 0.2
18	205 4	11.5	4.1	25.1	1.5	28	. .	400	. .	500	. .	75.9	64 50 23.8	. .	+ 2 0.9	115 58 45.9	+24.8
19	32 50	0.7	25.1	18.8	22.0	33	. .	. .	. .	190	184	75.9	327 5 27.8	. .	− 36.9	18 11 12.1	− 3.2
20	343 54	1.0	26.1	18.6	24.2	31	. .	860	. .	834	. .	75.9	16 1 8.0	60.8	+ 16.4	67 7 45.6	+ 0.9
21	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
22	328 26	1.7	27.2	20.7	28.4	34	. .	. .	. .	252	242	82.2	31 29 53.3	. .	+ 36.0	82 36 50.5	− 0.7
23	30 24	4.7	29.5	28.3	27.2	37	. .	450	. .	456	. .	82.2	329 32 45.0	. .	− 34.6	20 38 31.6	+ 1.5
24	54 24	9 28.6	22.5	17.8	23.7	33	610	620	624	630	630	82.2	305 31 39.4	. .	− 1 22.2	356 36 38.4	+ 0.9
25	343 38	10 7.8	1.7	24.0	0.3	37	. .	046	. .	030	. .	82.2	16 18 39.7	45.0	+ 17.2	67 25 18.1	+ 0.4
26	337 34	9 28.9	23.4	16.4	23.7	38	. .	. .	. .	122	108	82.2	22 22 48.8	. .	+ 24.2	73 29 34.2	+ 1.3
27	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
28	48 16	10 6.5	29.4	24.4	28.4	37	. .	. .	. .	796	800	82.2	311 40 50.1	. .	− 1 5.9	2 46 5.4	+ 1.4
29	292 16	2.1	24.2	19.2	24.8	31	. .	032	. .	026	. .	82.2	67 39 1.5	. .	+ 2 22.0	118 47 44.7	− 0.5
30	294 54	9 27.5	18.5	12.6	21.2	38	. .	. .	. .	670	680	82.2	65 2 53.6	45.8	+ 2 5.6	116 11 20.4	+ 2.2
31	343 16	29.8	24.1	18.1	24.2	36	. .	. .	. .	950	946	82.2	16 40 31.9	. .	+ 17.6	67 47 10.7	+ 0.5
32	353 12	10 3.6	27.5	22.3	28.8	33	. .	796	. .	742	. .	82.2	6 43 46.8	. .	+ 6.9	57 50 14.9	+ 1.0
33	326 36	3.1	27.8	21.3	28.2	34	. .	. .	. .	958	968	82.2	33 20 4.9	. .	+ 38.5	84 27 4.6	− 0.7
34	349 22	3.7	27.9	21.9	28.0	33	. .	660	. .	644	. .	82.2	10 33 44.9	47.6	+ 10 9	61 40 17.0	+ 1.9
35	345 24	9.0	5.4	27.0	3.0	35	. .	146	. .	116	. .	80.0	14 32 11.0	57.7	+ 15.0	65 38 47.2	− 2.9
36	206 14	14.6	11.3	3.7	7.0	32	920	924	920	829	864	80.0	153 41 42.0	59.9	− 28.4	77 25 7.6	+ 3.9
37	341 32	7.0	5.2	26.5	2.6	37	. .	064	. .	984	. .	80.0	18 24 39.2	. .	+ 19.1	69 31 19.5	− 1.4
38	341 32	7.0	5.2	26.5	2.6	37	. .	. .	. .	. .	050	80.0	18 24 40.1	. .	+ 19.1	69 31 20.4	− 0.5
39	342 16	14.2	10.2	3.0	8.1	36	. .	317	. .	275	. .	80.0	17 40 34.1	. .	+ 18.2	68 47 13.5	− 1.0
40	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		64.5	. .		. .
41	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
42	52 22	13.6	6.5	0.3	4.5	31	. .	. .	430	. .	. .	80.0	307 33 16.8	. .	− 1 13.2	358 38 24.8	− 1.0
43	310 32	5.4	4.1	26.0	2.9	32	554	. .	. .	. .	760	80.0	49 23 31.4	. .	+ 1 5.7	100 30 58.3	. .
44	310 32	5.4	4.1	26.0	2.9	33	. .	030	. .	086	. .	80.0	49 23 37.6	. .	+ 1 5.7	100 31 4.5	. .
45	10 58	1.2	28.0	22.7	28.0	32	160	. .	. .	. .	190	80.0	348 57 19.6	. .	− 11.0	40 3 29.8	− 1.2
46	340 4	8.1	6.9	27.8	3.6	32	. .	696	. .	636	. .	80.0	19 51 33.8	66.6	+ 20.4	70 58 15.4	0.0
47	26 0	6.7	4.9	26.5	1.8	32	345	. .	. .	. .	273	80.0	333 55 26.7	. .	− 27.6	25 1 20.3	− 3.7
48	199 0	11 2.3	0.7	23.9	28.0	36	373	310	. .	243	245	80.0	160 56 53.6	67.5	− 19.4	70 9 47.0	+ 4.1
49	13 28	10 2.3	0.9	24.1	29.4	34	161	. .	. .	. .	207	80.0	346 27 52.1	. .	− 13.5	37 33 59.8	− 1.3
50	298 34	12.3	10.0	3.7	9.7	38	042	. .	. .	. .	990	80.0	61 23 0.1	68.5	+ 1 42.6	112 31 3.9	. .

No.	Barom.	At Ther.
	in.	°
7	30.10	67.0
16	30.09	65.0
29	30.08	65.0
25	29.97	50.0
39	29.99	49.5
34	30.00	50.0
35	30.13	54.0
40	30.00	61.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
43	− 5.1	+ 3.2	. .	− 1.9
44	− 5.1	− 3.2	+ 0.2	− 8.1
50	− 11.8	+ 14.1	. .	+ 2.3

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Oct. 1	1	Venus II, S. . .	S.	. .	. .	23.6	25.8	28.0	30.3	32.5	. .	. .	27 28.04	— 0.99	. .	−42.22	15 26 44.83	— 0.31
	2	δ Ursæ Minoris, S. P.	S.	57.9	15.5	48.7	. .	4.6	. .	. .	. .	. .	13 30.68	— 3.92	. .	−42.70	18 12 44.06	— 0.25
	3	Moon II . . .	S.	32.7	35.6	37.3	44.4	46.9	49.3	56.3	58.1	1.1	36 46.86	— 0.79	. .	−42.71	6 36 3.36	−74.64
	4	51 Cephei . . .	S.	. .	. .	20.1	2.0	44.2	27.2	9.1	. .	. .	41 44.52	+ 2.94	. .	−42.72	6 41 4.74	+ 0.87
	5	ε Canis Majoris. .	S.	11.5	14.3	16.2	23.1	25.4	27.7	34.7	36.4	39.3	54 25.40	— 1.04	−42.67	−42.72	6 53 41.64	— 0.10
	6	δ Canis Majoris .	S.	47.5	50.2	51.9	58.9	1.2	3.4	10.1	11.9	14.8	4 1.10	— 1.01	−42.77	−42.73	7 3 17.36	— 0.01
	7	δ Geminorum . .	S.	8.2	10.9	12.5	19.0	21.3	23.6	30.0	31.6	34.5	13 21.29	— 0.82	−42.70	−42.73	7 12 37.74	— 0.09
	8	a^1 Geminorum . .	S.	4.2	7.2	9.0	. .	. .	. .	28.3	30.2	33.2	27 18.68	— 0.77	. .	−42.74	7 26 35.17	— 0.10
	9	a^2 Geminorum . .	S.	. .	. .	14.4	16.6	19.2	21.5	24.4	. .	. .	27 19.22	— 0.77	−42.94	−42.74	7 26 35.71	+ 0.44
	10	α Canis Minoris (R.)	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	11	δ Leonis	Sk.	55.6	58.5	0.1	6.6	8.9	11.0	17.6	19.2	21.8	8 8.81	— 0.97	−42.68	−42.73	11 7 25.11	— 0.11
	12	β Leonis	Sk.	9.6	12.2	13.9	20.2	22.4	24.4	30.7	32.4	35.0	43 22.31	— 0.99	−42.74	−42.73	11 42 38.59	— 0.01
2	13	Sun I, S. . . .	Sk.	40.9	43.5	44.9	50.9	53.0	55.2	1.5	2.9	5.6	33 53.16	— 1.05	. .	−42.76	12 33 9.35	. .
	14	Sun II, N. . . .	Sk.	. .	. .	57.8	59.8	1.9	3.9	5.9	. .	. .	36 1.86	— 1.05	. .	−42.76	12 35 18.05	. .
	15	12 Canum Venat. .	Sk.	36.0	39.4	41.5	46.8	51.9	57.0	2.3	4.4	7.7	50 51.89	— 0.91	−42.61	−42.77	12 50 8.21	— 0.16
	16	Polaris, S. P. . .	Sk.	. .	. .	3.0	36.0	13.0	51.0	21.0	27.0	24.0	14 12.61	— 4.87	. .	−42.78	1 13 24.96	+ 3.95
	17	α Virginis . . .	Sk.	5.3	7.8	9.5	15.7	17.7	19.8	26.0	27.6	30.1	19 17.72	— 1.08	−42.72	−42.78	13 18 33.86	— 0.08
	18	Mercury C . .	Sk.	56.1	58.8	4.5	6.5	8.7	10.8	12.7	18.6	21.2	39 8.66	— 1.08	. .	−42.80	13 38 25.78	+ 0.02
	19	η Bootis	Sk.	12.5	15.2	16.8	23.3	25.4	27.6	34.0	35.7	38.5	49 25.44	— 0.98	−42.76	−42.80	13 48 41.66	— 0.09
	20	α Bootis (R.). . .	Sk.	. .	. .	35.9	38.2	40.2	42.5	46.6	48.4	51.0	10 38.06	+ 0.23	. .	−42.81	14 9 55.48	+ 0.06
	21	α Coronæ Borealis .	Sk.	. .	. .	1.6	3.3	5.6	7.9	10.3	. .	. .	30 5.62	— 0.96	−42.82	−42.86	15 29 21.80	— 0.04
	22	Venus I, N. . .	Sk.	11.0	14.0	15.7	22.4	24.5	26.7	33.5	35.0	37.9	31 24.52	— 1.13	. .	−42.86	15 30 41.53	+ 0.98
	23	α Serpentis . . .	Sk.	36.1	38.7	40.3	46.4	48.5	50.5	56.7	58.2	0.8	38 48.47	— 1.02	−42.82	−42.86	15 38 4.59	— 0.02
	24	ε Serpentis . . .	Sk.	4.6	7.2	8.7	14.8	16.8	18.9	25.0	26.6	29.2	45 16.87	— 1.03	−42.74	−42.87	15 44 32.97	— 0.13
	25	δ Aquilæ. . . .	Sk.	42.2	44.9	46.4	52.6	54.7	56.7	2.8	4.3	6.9	19 54.61	— 0.95	−42.98	−42.98	19 19 10.68	+ 0.05
	26	B. A. C. 6714 . .	Sk.	21.9	24.8	26.5	33.6	35.9	38.4	45.4	47.0	50.0	30 35.94	— 0.84	. .	−42.99	19 29 52.11	− 1.31
	27	Anonymous . .	Sk.	. .	. .	51.0	53.4	55.7	58.6	0.9	. .	. .	32 55.92	— 1.13	. .	−42.99	19 32 11.80	— 2.74
	28	γ Aquilæ. . . .	Sk.	49.7	52.3	53.8	0.0	2.0	4.1	10.3	11.9	14.6	41 2.08	— 0.92	−43.03	−42.99	19 40 18.17	+ 0.07
	29	Anonymous . .	Sk.	. .	. .	52.6	54.6	56.6	58.7	0.8	. .	. .	44 56.66	— 0.94	. .	−42.99	19 44 12.68	— 2.02
	30	λ Ursæ Minoris . .	Sk.	. .	. .	. .	43.0	31.0	21.5	10.5	. .	. .	50 31.40	+ 7.52	. .	−43.00	19 49 55.92	+ 7.82
	31	B. A. C. 6895 . .	Sk.	13.7	17.8	20.1	29.5	32.7	35.9	45.4	47.7	51.6	58 32.71	— 0.73	. .	−43.00	19 57 48.98	— 1.29
	32	B. A. C. 6973 . .	Sk.	. .	. .	14.0	16.2	18.6	20.9	23.1	. .	. .	11 18.56	— 0.85	. .	−43.01	20 10 34.70	— 1.84
	33	XX, 4	Sk.	. .	. .	. .	. .	32.7	35.1	40.0	41.8	44.8	12 30.32	— 1.13	. .	−43.01	20 11 46.18	— 2.98
	34	B. A. C. 7083 . .	Sk.	. .	. .	29.4	32.3	35.2	38.0	41.1	. .	. .	26 35.20	— 0.76	. .	−43.02	20 25 51.42	— 1.60
	35	XX, 10	Sk.	. .	. .	. .	. .	32.7	35.3	40.5	42.6	45.8	27 30.11	— 1.17	. .	−43.02	20 26 45.92	— 3.29
	36	B. A. C. 7176 . .	Sk.	3.0	6.1	14.3	18.4	22.4	26.4	30.6	38.7	41.9	38 22.42	— 0.64	. .	−43.03	20 37 38.75	— 1.33
	37	Saturn I, N. . .	Sk.	4.3	7.0	8.8	. .	. .	. .	25.9	27.6	30.3	42 17.32	— 1.05	. .	−43.03	20 41 33.24	. .
	38	Saturn II, S. . .	Sk.	. .	. .	15.9	18.0	20.0	22.3	24.5	. .	. .	42 20.14	— 1.05	. .	−43.03	20 41 36.06	. .
	39	XX, 18	Sk.	7.0	9.9	11.7	18.8	21.3	23.7	30.9	32.4	35.4	48 21.23	— 1.12	. .	−43.03	20 47 37.08	— 3.14
	40	β Aquarii . . .	Sk.	. .	. .	38.3	40.2	42.3	44.4	46.4	. .	. .	25 42.32	— 0.99	−43.08	−43.05	21 24 58.28	+ 0.06
	41	XXI, 7	Sk.	. .	. .	9.6	12.0	14.2	16.7	19.2	. .	. .	28 14.34	— 1.12	. .	−43.05	21 27 30.17	— 3.31
	42	XXI, 11	Sk.	. .	. .	27.4	29.7	32.0	34.2	36.5	. .	. .	32 31.96	— 1.08	. .	−43.05	21 31 47.83	— 3.18
	43	ε Pegasi	Sk.	34.0	36.5	38.2	44.3	46.4	48.5	54.6	56.3	58.8	38 46.40	— 0.93	−43.05	−43.06	21 38 2.41	0.00
	44	B. A. C. 7664 . .	Sk.	31.0	33.6	35.2	41.5	43.7	45.7	52.0	53.5	56.2	55 43.60	— 0.92	. .	−43.07	21 54 59.61	— 2.56
	45	α Aquarii . . .	Sk.	56.0	57.5	1.5	3.6	5.6	7.6	9.7	13.7	15.2	0 5.60	— 0.97	−43.14	−43.07	21 59 21.56	+ 0.10
	46	XXII, 1	Sk.	24.5	27.3	29.0	35.6	37.8	40.0	46.7	48.3	51.1	1 37.81	— 1.07	. .	−43.07	22 0 53.67	— 3.07
	47	51 Cephei	Sk.	. .	. .	. .	2.0	44.5	25.5	9.0	. .	. .	41 44.00	+ 3.33	. .	−43.35	6 41 3.98	— 0.50
	48	ε Canis Majoris. .	Sk.	12.3	15.3	17.0	23.9	26.3	28.6	35.6	37.3	40.2	54 26.28	— 1.04	−43.52	−43.36	6 53 41.88	+ 0.11
	49	δ Canis Majoris. .	Sk.	48.2	51.0	52.6	59.6	1.9	4.1	11.0	12.6	15.5	4 1.83	— 1.03	−43.46	−43.36	7 3 17.44	+ 0.05
	50	δ Geminorum . .	Sk.	8.9	11.6	13.3	19.8	22.0	24.2	30.8	32.4	35.4	13 22.04	— 0.83	−43.40	−43.37	7 12 37.84	— 0.03

10. Bisections at wires I, C_1, C_8, and VII.
29. Wire A used.
32. Bisections at wires II and III.
36. Bisections at wires I and III.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	298 34	10 12.3	10.0	3.7	9.7	39	. .	798	. .	800	. .	80.0	61 23 27.6	. .	+ 1 42.7	112 31 31.5	. .
2	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
3	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		53.0	. .		. .
4	48 16	17.5	11.6	5.3	9.0	36	896	876	880	905	871	81.0	311 40 46.1	. .	— 1 4.4	2 46 2.9	— 1.1
5	292 16	15.1	9.4	3.8	9.0	30	. .	442	. .	410	. .	81.0	67 39 5.4	. .	+ 2 18.8	118 47 45.4	+ 0.1
6	294 54	10.4	4.8	27.0	3.9	37	. .	960	. .	910	. .	81.0	65 2 55.1	53.1	+ 2 2.7	116 11 19.0	+ 0.7
7	343 16	16.4	12.4	2.5	8.0	35	. .	958	. .	980	. .	81.0	16 40 31.1	. .	+ 17.2	67 47 9.5	— 0.7
8	353 12	12.6	7.5	0.2	5.2	33	507	. .	. .	. .	437	81.0	6 43 49.7	. .	+ 6.8	57 50 17.7	+ 3.7
9	353 12	12.6	7.5	0.2	5.2	33	. .	256	. .	192	. .	81.0	6 43 45.6	. .	+ 6.8	57 50 13.6	— 0.4
10	213 16	17.8	12.8	6.7	8.7	33	432	406	. .	382	366	81.0	146 39 53.2	. .	— 37.8	84 27 5.8	+ 0.5
11	342 16	0.5	28.4	22.8	26.1	37	. .	210	. .	178	. .	80.8	17 40 36.7	. .	+ 17.6	65 37 15.5	+ 0.8
12	336 20	9 28.5	26.4	20.0	23.4	37	. .	980	. .	930	. .	80.8	23 36 46.0	74.0	+ 24.1	74 43 31.3	+ 2.6
13	317 6	10 7.4	5.8	28.9	1.3	36	525	514	. .	. .	. .	80.8	42 50 32.8	. .	+ 50.9	93 57 44.9	. .
14	317 38	1.3	29.7	24.0	29.5	36	. .	. .	. .	868	858	80.8	42 18 33.0	76.1	+ 29.9	93 25 44.1	. .
15	0 2	1.3	28.5	21.4	24.0	34	. .	053	. .	023	. .	80.8	359 53 47.9	. .	— 0.1	51 0 9.0	+ 0.2
16	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
17	310 34	9 29.3	28.7	21.4	24.7	38	. .	228	. .	173	. .	80.8	49 22 51.0	. .	+ 1 3.7	100 30 15.9	— 0.5
18	309 54	10 5.8	9.4	0.6	2.1	38	. .	470	. .	610	. .	80.8	50 3 4.7	. .	+ 1 5.2	101 10 31.1	. .
19	340 4	5.8	6.8	28.0	27.9	32	. .	955	. .	930	. .	80.8	19 51 36.8	. .	+ 19.7	70 58 17.7	+ 2.1
20	199 0	9 29.7	29.2	21.6	19.8	38	605	580	. .	. .	. .	80.8	160 56 55.6	79.1	— 18.9	70 9 44.5	+ 1.4
21	348 10	26.3	25.8	19.5	17.0	31	600	625	. .	. .	. .	80.8	11 45 6.2	. .	+ 11.4	62 51 38.8	+ 2.6
22	298 14	10 4.0	5.5	25.5	29.0	32	. .	. .	. .	280	352	80.8	61 41 25.7	. .	+ 1 41.2	112 49 28.1	. .
23	327 52	1.9	0.9	24.0	23.6	33	840	840	. .	. .	. .	80.8	32 3 45.6	. .	+ 34.3	83 10 41.1	+ 2.6
24	325 54	2.6	2.1	26.0	25.6	33	170	112	. .	. .	. .	80.8	34 1 36.3	77.2	+ 37 0	85 8 34.5	+ 1.4
25	323 56	14.8	9.1	29.9	24.4	37	. .	950	. .	940	. .	79.1	36 0 54.0	. .	+ 41.1	87 7 56.3	+ 2.8
26	350 14	9.8	5.0	26.0	1.5	34	758	740	. .	. .	. .	79.1	9 42 3.5	. .	+ 9.7	60 48 34.4	+12.5
27	288 18	13.0	7.2	0.7	4.8	29	. .	. .	. .	100	190	79.1	71 36 41.1	. .	+ 2 48.3	122 45 50.6	— 6.5
28	331 22	6.9	3.5	25.0	29.5	36	. .	662	. .	636	. .	79.1	28 34 30.8	. .	+ 30.8	79 41 22.8	— 0.3
29	328 36	14.2	9.1	2.0	4.6	35	. .	. .	. .	522	528	79.1	31 17 47.0	. .	+ 34.4	82 24 42.6	+ 7.8
30	49 56	8.6	2.8	25.2	0.1	29	. .	950	928	940	. .	79.1	309 58 48.6	. .	— 1 7.4	1 4 2.4	+ 0.1
31	10 48	9.0	4.5	28.6	2.4	35	. .	. .	. .	530	488	79.1	349 8 16.7	62.8	— 10.9	40 14 27.0	+17.0
32	348 28	11.8	6.6	27.0	3.5	32	414	400	. .	. .	. .	79.1	11 27 29.2	. .	+ 11.5	62 34 1.9	+14.2
33	288 58	13.0	8.0	27.8	2.3	35	. .	. .	. .	220	190	79.1	70 58 12.8	. .	+ 2 42.8	122 7 16.8	— 3.3
34	6 32	5.0	2.5	25.0	28.1	32	172	180	. .	. .	. .	79.1	353 23 21.4	. .	— 6.6	44 29 36.0	+17.8
35	282 34	8.0	2.8	26.2	0.0	29	. .	. .	. .	500	525	79.1	77 20 42.0	. .	+ 4 6.9	128 31 10.1	— 4.1
36	21 4	5.6	1.0	24.3	27.0	29	574	584	. .	. .	. .	79.1	338 50 41.3	. .	— 22.0	29 56 40.5	+19.1
37	301 50	9 27.5	23.3	14.4	20.1	34	300	210	. .	. .	. .	79.1	58 5 43.7	. .	+ 1 31.0	109 13 35.9	. .
38	301 50	27.5	23.3	14.4	20.1	35	. .	. .	. .	390	454	79.1	58 6 2.3	. .	+ 1 30.9	109 13 54.4	. .
39	290 28	10 10.7	5.2	28.2	1.0	34	. .	830	. .	825	. .	79.1	69 28 5.3	. .	+ 2 30.5	120 36 57.0	+ 0.2
40	314 56	9.0	3.9	25.5	0.0	34	420	412	. .	. .	. .	79.1	44 59 57.0	. .	+ 56.8	96 7 15.0	— 1.1
41	290 50	0.2	24.9	16.5	24.0	36	500	470	. .	. .	. .	79.1	69 6 20.3	. .	+ 2 28.1	120 15 9.6	+ 3.8
42	296 4	6.0	1.1	24.0	0.6	36	698	660	. .	. .	. .	79.1	63 52 29.8	. .	+ 1 55.7	115 0 46.7	+ 5.6
43	330 20	9 26.0	20.5	12.3	19.8	31	. .	245	. .	192	. .	79.1	29 34 56.1	. .	+ 32.4	80 41 49.7	— 0.9
44	333 34	10 6.5	2.1	26.2	1.3	34	024	990	. .	. .	. .	79.1	26 21 50.4	. .	+ 28.3	77 28 39.9	+16.2
45	320 8	10.2	5.5	26.5	2.8	36	155	255	. .	. .	. .	79.1	39 48 26.1	. .	+ 47.6	90 55 34.9	— 2.7
46	298 52	4.4	29.6	19.3	27.3	35	. .	. .	. .	370	360	79.1	61 4 7.7	59.0	+ 1 43.0	112 12 11.9	+ 8.8
47	48 16	6.3	29.9	25.2	28.0	37	. .	820	870	920	. .	80.2	311 40 49.3	43.8	— 1 6.4	2 46 4.1	0.0
48	292 16	4.8	0.0	23.7	0.7	30	. .	. .	. .	790	718	80.2	67 39 0.3	. .	+ 2 22.8	118 47 44.3	— 1.0
49	294 54	7.1	0.5	24.0	0.2	38	. .	008	. .	930	. .	80.2	65 2 51.2	. .	+ 2 6.3	116 11 18.7	+ 0.5
50	343 16	4.7	29.8	22.0	27.5	36	. .	780	. .	690	. .	80.2	16 40 30.7	. .	+ 17.7	67 47 9.6	— 0.7

N.	Barom.	At. Ther.
	in.	°
1	29.75	54.0
13	29.76	68.0
14	29.75	70.6
18	29.76	74.2
22	29.79	72.6
37	29.91	63.8
38	29.98	60.8
	30.07	49.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
1	— 11.8	— 14.1	+ 0.6	— 25.3
13	— 6.0	— 16 0.4	. .	— 16 6.4
14	— 6.0	+ 16 0.4	. .	+ 15 54.4
18	— 5.1	. .	+ 0.1	— 5.0
22	— 11.9	+ 13.2	. .	+ 1.3
37	— 0.8	+ 9.2	. .	+ 8.4
38	— 0.8	— 9.2	. .	— 10.0

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Ellan'us ections.
													m. s.	s.	s.	s.	h. m. s.	s.
1874. Oct. 2	1	α^2 Geminorum . .	Sk.	5.3	8.4	10.0	17.4	19.7	22.1	29.5	31.3	34.2	27 19.77	− 0.78	−43.44	−43.38	7 26 35.61	+ 0.30
	2	Moon II, S. . .	Sk.	17.5	20.5	22.2	29.2	31.7	34.0	41.0	42.7	45.7	38 31.61	− 0.81	. .	−43.39	7 37 47.41	−72.57
	3	ϵ Leonis	E.	14.0	17.0	18.7	25.1	27.5	29.8	36.4	38.1	40.8	39 27.49	− 0.92	−43.56	−43.54	9 38 43.03	− 0.04
	4	α Leonis	E.	12.7	15.1	16.8	23.0	25.1	27.1	33.5	35.2	37.7	2 25.13	− 0.96	−43.54	−43.57	10 1 40.60	− 0.07
	5	γ^1 Leonis	E.	33.8	36.7	38.3	44.7	46.9	49.2	55.6	57.3	0.1	13 46.96	− 0.93	−43.56	−43.58	10 13 2.45	− 0.04
	6	α Ursæ Majoris . .	E.	14.6	20.3	23.5	36.9	41.4	45.6	58.9	1.9	7.8	56 41.21	− 0.76	. .	−43.60	10 55 56.85	− 0.09
	7	δ Leonis	E.	56.6	59.2	0.9	7.5	9.7	11.9	18.4	20.3	22.8	8 9.70	− 0.93	−43.59	−43.60	11 7 25.17	− 0.07
	8	δ Crateris . . .	E.	35.0	37.9	39.6	45.7	47.8	49.9	56.1	57.8	0.4	13 47.80	− 1.04	−43.78	−43.62	11 13 3.14	+ 0.14
	9	λ Draconis . . .	E.	. .	. .	26.4	32.7	38.6	44.6	50.6	. .	. .	24 38.58	− 0.66	. .	−43.62	11 23 54.30	+ 0.11
	10	γ Cephei, S. P. . .	E.	54.6	44.2	37.4	. .	. .	. .	. .	. .	. .	35 1.01	− 1.32	. .	−43.63	23 34 16.06	+ 0.42
	11	β Leonis	E.	10.5	13.0	14.7	21.0	23.2	25.3	31.7	33.3	36.0	43 23.19	− 0.95	−43.64	−43.63	11 42 38.61	− 0.01
	12	γ Ursæ Majoris . .	E.	35.6	40.2	42.7	53.2	56.8	0.4	10.9	13.5	17.8	47 56.79	− 0.81	. .	−43.64	11 47 12.34	+ 0.08
3	13	Sun I, N. . . .	E.	22.2	23.6	27.6	29.7	31.9	33.9	36.0	40.1	41.6	37 31.84	− 1.00	. .	−43.68	12 36 47.16	. .
	14	Sun II, S. . . .	E.	28.4	31.0	32.3	38.4	40.6	42.8	48.9	50.4	53.0	39 40.64	− 1.00	. .	−43.68	12 38 55.96	. .
	15	Polaris, S. P. . .	E.	. .	. .	5.0	37.5	11.0	45.5	20.5	. .	. .	14 11.90	− 4.69	. .	−43.71	1 13 23.50	+42.28
	16	α Virginis . . .	E.	8.9	10.2	14.7	16.7	18.7	20.8	22.9	27.0	28.5	19 18.71	− 1.03	−43.76	−43.72	13 18 33.96	+ 0.02
	17	η Ursæ Majoris . .	E.	. .	. .	12.8	16.1	19.1	22.3	25.4	. .	. .	43 19.14	− 0.83	. .	−43.74	13 42 34.57	− 0.04
	18	Mercury I, C. . .	E.	25.1	27.6	29.2	35.5	37.6	39.8	46.0	47.6	50.3	44 37.63	− 1.04	. .	−43.74	13 43 52.85	+ 0.18
	19	η Bootis	E.	13.3	16.0	17.7	24.2	26.3	28.4	34.9	36.6	39.3	49 20.30	− 0.94	−43.66	−43.74	13 48 41.62	− 0.13
	20	α Draconis . . .	E.	13.5	19.7	23.0	37.5	42.4	47.2	1.7	5.3	11.3	1 42.40	− 0.73	. .	−43.75	14 0 57.92	− 0.06
	21	α Bootis	E.	27.0	29.8	31.5	37.9	40.0	42.2	48.7	50.3	53.1	10 40.06	− 0.92	−43.73	−43.76	14 9 55.38	− 0.03
	22	ϵ Bootis	E.	. .	. .	9.6	11.9	14.2	16.5	19.0	. .	. .	40 14.24	− 0.91	−43.72	−43.78	14 39 29.55	− 0.08
	23	α^2 Libræ	E.	27.4	30.0	31.7	38.0	40.2	42.4	48.7	50.3	53.2	44 40.21	− 1.04	−43.85	−43.78	14 43 55.39	+ 0.06
	24	β Ursæ Minoris. .	E.	0.7	10.4	16.5	39.9	47.8	55.1	18.4	23.9	33.7	51 47.38	− 0.58	. .	−43.79	14 51 3.01	+ 0.02
	25	β Bootis	E.	40.7	44.3	46.0	54.4	56.9	59.6	7.8	9.8	13.0	57 56.94	− 0.87	. .	−43.79	14 57 12.28	− 0.01
	26	β Libræ	E.	47.0	49.5	51.0	57.3	59.4	1.6	7.5	9.0	11.8	10 59.34	− 1.02	−43.79	−43.80	15 10 14.52	− 0.01
	27	γ^2 Ursæ Majoris . .	E.	58.5	7.0	25.5	32.0	38.6	45.6	52.4	10.8	19.0	21 38.82	− 0.63	. .	−43.81	15 20 54.38	− 0.11
	28	α Coronæ Borealis .	E.	52.7	55.6	57.4	4.2	6.5	8.8	15.6	17.4	20.3	30 6.50	− 0.91	−43.76	−43.81	15 29 21.78	− 0.05
	29	Venus I, N. . .	E.	. .	. .	. .	. .	24.0	26.3	30.7	32.4	35.1	35 21.79	− 1.07	. .	−43.82	15 34 36.90	+ 0.91
	30	α Serpentis . . .	E.	36.9	39.5	41.2	47.4	49.5	51.5	57.5	59.1	1.7	38 49.37	− 0.97	−43.78	−43.82	15 38 4.58	− 0.02
	31	ϵ Serpentis . . .	E.	5.3	8.3	9.8	15.9	18.1	20.1	26.0	27.5	30.1	45 17.90	− 0.98	−43.83	−43.83	15 44 33.00	0.00
	32	δ Ursæ Minoris. .	E.	. .	. .	17.5	52.0	24.0	0.9	35.5	. .	. .	13 25.90	+ 1.88	. .	−43.96	18 12 43.82	+ 0.20
	33	1 Aquilæ. . . .	E.	55.4	58.0	59.6	5.7	7.5	9.9	16.0	17.6	20.2	29 7.81	− 0.96	−43.98	−43.97	18 28 22.88	+ 0.08
	34	α Lyræ	E.	10.4	13.6	15.6	23.5	26.1	28.7	36.5	38.4	41.7	33 26.06	− 0.76	−43.90	−43.97	18 32 41.33	− 0.09
	35	51 Cephei, S. P. . .	E.	. .	. .	17.0	34.0	54.0	11.0	30.5	. .	. .	41 53.30	− 3.97	. .	−43.98	6 41 5.35	+ 0.57
	36	β Libræ	E.	57.0	0.0	1.8	9.0	11.6	14.0	21.5	23.4	26.4	46 11.63	− 0.78	−43.92	−43.98	18 45 26.87	− 0.01
	37	50 Draconis . . .	E.	. .	. .	52.5	0.2	8.8	16.4	24.9	. .	. .	51 8.56	− 0.28	. .	−43.98	18 50 24.30	+ 0.28
	38	ζ Aquilæ. . . .	E.	11.1	13.8	15.5	21.7	23.7	25.8	32.0	33.7	36.4	0 23.74	− 0.87	−44.08	−43.99	18 59 38.88	+ 0.11
	39	XIX, 2	E.	50.0	52.9	54.4	0.8	3.0	5.2	11.7	13.4	16.2	11 3.07	− 1.01	. .	−44.00	19 10 18.06	− 2.25
	40	XIX, 3	E.	4.3	7.3	9.0	16.0	18.5	20.9	27.7	29.5	32.5	12 18.41	− 1.06	. .	−44.00	19 11 33.35	− 2.46
	41	δ Aquilæ. . . .	E.	43.4	46.0	47.7	53.7	55.7	57.7	3.9	5.4	7.9	19 55.71	− 0.91	−44.14	−44.01	19 19 10.79	+ 0.11
	42	B. A. C. 6654 . .	E.	. .	. .	39.0	41.2	43.5	45.6	47.8	. .	. .	20 43.42	− 0.84	. .	−44.01	19 19 58.57	− 1.01
	43	B. A. C. 6762 . .	E.	19.0	21.9	23.7	30.5	32.8	35.0	41.9	43.7	46.4	39 32.77	− 0.81	. .	−44.03	19 38 47.93	− 1.06
	44	γ Aquilæ. . . .	E.	50.5	53.0	54.9	0.9	3.0	5.0	11.4	13.0	15.5	41 3.02	− 0.88	−44.02	−44.03	19 40 18.11	+ 0.01
	45	α Aquilæ. . . .	E.	12.8	16.9	21.0	23.0	25.0	27.1	29.2	33.3	37.5	45 25.09	− 0.89	−44.05	−44.04	19 44 40.16	+ 0.01
	46	λ Ursæ Minoris. .	E.	. .	. .	. .	38.0	25.0	14.0	2.0	. .	. .	50 24.75	+ 7.36	. .	−44.04	19 49 48.07	+ 1.44
	47	XX, 4	E.	17.0	20.0	21.9	29.0	31.5	33.9	41.0	43.0	46.0	12 31.48	− 1.08	. .	−44.06	20 11 46.34	− 2.09
	48	π Capricorni. . .	E.	41.2	44.0	45.5	51.6	54.0	56.3	2.8	4.4	7.1	20 54.14	− 1.00	−44.02	−44.06	20 20 9.08	− 0.01
	49	XX, 10. . . .	E.	15.8	19.0	21.0	28.8	31.4	33.9	41.8	43.7	46.9	27 31.37	− 1.13	. .	−44.06	20 26 46.18	− 3.31

2, 9. Bisections at sets B and D.
10. Bisections at wires B_1 and B_2.
13. Wire B used.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	353 12	10 5.5	29.0	23.0	26.7	33	762	805	. .	. .	. .	80.2	6 43 45.4	. .	+ 7.0	57 50 13.6	− 0.5
2	347 30	11.8	6.1	29.1	0.4	32	732	. .	787	. .	752	80.2	12 25 35.5	45.5	+ 13.0	63 32 9.7	. .
3	345 24	9.0	4.2	29.5	2.5	35	. .	280	. .	225	. .	78.3	14 32 11.4	58.0	+ 14.9	65 38 47.5	− 2.9
4	333 38	5.1	2.5	26.3	29.0	35	. .	480	. .	400	. .	78.3	26 18 11.1	. .	+ 28.4	77 25 0.7	− 3.4
5	341 32	7.8	5.5	1.0	1.9	37	. .	050	. .	985	. .	78.3	18 24 38.6	. .	+ 19.1	69 31 18.9	− 2.3
6	23 28	10.0	7.5	3.0	3.5	35	. .	850	. .	795	. .	78.3	336 28 22.8	. .	− 24.8	27 34 19.2	− 3.8
7	342 16	4.0	2.3	26.2	0.3	36	. .	920	. .	890	. .	78.3	17 40 33.6	. .	+ 18.2	68 47 13.0	− 1.9
8	306 58	8.5	8.0	0.5	4.5	35	. .	. .	. .	170	085	78.3	52 58 11.1	. .	+ 1 15.3	104 5 47.6	− 0.8
9	31 4	8.6	3.9	28.8	0.1	37	960	. .	. .	. .	885	78.3	328 52 51.4	. .	− 34.3	19 58 38.3	− 2.6
10	64 4	3.6	0.3	25.3	26.3	33	455	440	. .	. .	. .	78.3	295 51 38.2	. .	− 1 56.4	346 56 3.0	− 0.4
11	336 20	24.3	21.7	15.8	20.0	36	. .	140	. .	135	. .	78.3	23 36 41.5	. .	+ 24.8	74 43 27.5	− 1.3
12	15 26	8.0	5.7	1.7	1.9	35	. .	810	. .	790	. .	78.3	344 30 20.6	. .	− 15.7	35 36 26.1	− 1.3
13	317 16	1.6	27.2	20.7	26.7	31	650	705	. .	. .	. .	78.3	42 41 53.0	. .	+ 51.9	93 49 6.1	. .
14	316 42	3.1	0.2	25.0	0.2	33	. .	. .	. .	695	720	78.3	43 13 43.2	69.5	+ 52.9	94 20 57.3	. .
15	52 22	0.4	27.8	23.7	26.5	32	185	. .	. .	. .	165	78.3	307 33 17.0	. .	− 1 13.2	358 38 25.0	− 1.7
16	310 34	4.7	3.0	27.8	1.0	37	. .	850	. .	815	. .	78.3	49 22 48.5	. .	+ 1 5.6	100 30 15.3	− 1.1
17	10 58	10.1	7.8	2.5	4.0	31	620	710	. .	. .	. .	78.3	348 57 18.9	. .	− 11.0	40 3 29.1	− 2.5
18	309 14	4.6	3.5	28.0	1.8	33	. .	285	. .	235	. .	78.3	50 41 38.8	. .	+ 1 8.9	101 49 8.9	. .
19	340 4	2.3	1.2	24.3	28.1	33	. .	200	. .	105	. .	78.3	19 51 34.3	. .	+ 20.4	70 58 15.9	+ 0.2
20	26 0	7.2	4.9	29.8	0.1	32	. .	440	. .	560	. .	78.3	333 55 29.0	. .	− 27.6	25 1 22.6	− 2.1
21	340 54	4.8	4.3	27.3	29.0	38	. .	785	. .	765	. .	78.3	19 3 2.8	. .	+ 19.5	70 9 43.5	+ 0.2
22	348 38	10.2	8.0	2.2	2.8	30	. .	900	. .	895	. .	78.3	11 17 6.7	. .	+ 11.3	62 23 39.2	0.0
23	315 32	3.5	0.7	26.3	0.0	32	. .	805	. .	760	. .	78.3	54 23 29.6	. .	+ 1 18.8	105 31 9.6	+ 0.9
24	35 42	4.2	1.6	25.2	26.5	35	. .	235	. .	165	. .	78.3	324 14 7.2	. .	− 40.7	15 19 47.7	− 3.2
25	1 56	7.5	6.1	0.2	0.5	35	. .	945	. .	925	. .	78.3	358 0 21.7	. .	− 2.0	49 6 40.9	− 1.9
26	312 8	9.1	7.1	1.0	3.5	33	. .	285	. .	235	. .	78.3	47 47 42.0	. .	+ 1 2.3	98 55 5.5	− 0.6
27	35 18	8.0	4.8	1.0	0.5	31	. .	740	. .	730	. .	78.3	326 37 18.2	. .	− 37.3	17 43 2.1	− 1.4
28	348 12	6.5	4.8	27.5	29.6	38	. .	700	. .	685	. .	78.3	11 45 2.4	. .	+ 11.8	62 51 35.4	− 1.0
29	297 56	8.1	4.8	28.8	2.3	31	. .	. .	. .	430	495	78.3	61 59 13.0	. .	+ 1 46.0	113 7 20.2	. .
30	327 52	3.2	2.0	27.1	27.8	33	. .	610	. .	560	. .	78.3	32 3 41.9	. .	+ 35.5	83 10 38.6	− 0.1
31	325 54	6.0	4.7	28.0	29.6	32	. .	945	. .	885	. .	78.3	34 1 33.7	. .	+ 38.3	85 8 33.2	0.0
32	47 38	18.0	12.5	6.5	11.0	34	120	. .	115	. .	115	79.1	312 18 2.9	63.5	− 1 2.5	3 23 21.6	− 1.0
33	312 44	7.5	2.5	9.1	14.0	35	. .	930	. .	900	. .	79.1	47 12 26.5	. .	+ 1 1.5	98 19 49.2	− 0.4
34	359 42	7.7	4.5	27.5	29.7	32	. .	120	. .	100	. .	79.1	0 13 22.6	. .	+ 0.2	51 19 44.0	− 1.2
35	53 46	17.6	12.1	6.8	8.8	29	575	. .	550	. .	585	79.1	306 8 52.3	. .	− 1 17.9	357 13 55.6	− 0.3
36	354 16	13.2	9.4	2.1	3.0	35	420	410	. .	350	330	79.1	5 40 17.4	. .	+ 5.7	56 46 44.3	− 1.1
37	36 18	20.7	15.1	9.0	10.6	30	. .	. .	. .	030	980	79.1	323 37 4.1	. .	− 4.0	14 42 43.3	− 0.2
38	334 44	12.8	8.0	1.7	6.0	35	. .	825	. .	735	. .	79.1	25 12 23.4	. .	+ 26.9	76 19 11.5	− 0.6
39	301 54	9.5	4.8	27.6	2.2	37	060	020	. .	. .	. .	79.1	58 2 38.5	. .	+ 1 31.4	109 10 31.1	− 3.2
40	291 50	11.0	4.4	29.3	4.1	35	. .	400	. .	400	. .	79.1	68 6 14.9	. .	+ 2 21.4	119 14 57.5	− 6.8
41	323 56	12.8	8.8	0.8	3.8	37	870	800	. .	. .	. .	79.1	36 0 53.9	. .	+ 41.6	87 7 56.7	− 2.4
42	340 36	18.8	15.3	7.9	10.3	33	. .	. .	. .	570	560	79.1	19 19 55.9	. .	+ 20.1	70 26 37.2	+ 9.7
43	347 52	8.2	4.3	26.2	0.2	30	995	990	. .	. .	. .	79.1	12 3 5.1	. .	+ 12.2	63 9 38.5	+12.5
44	331 22	9.6	5.3	27.5	1.3	36	. .	570	. .	530	. .	79.1	28 34 31.5	. .	+ 31.2	79 41 23.9	+ 0.8
45	329 36	14.3	10.3	2.5	6.3	36	. .	900	. .	810	. .	79.1	30 20 41.1	. .	+ 33.6	81 27 35.9	− 1.5
46	49 56	14.6	7.7	1.3	3.7	29	. .	555	. .	625	. .	79.1	309 58 48.4	. .	− 1 8.4	1 4 1.2	− 1.0
47	288 58	18.7	13.0	5.5	9.3	34	. .	730	. .	690	. .	79.1	70 58 11.3	. .	+ 2 45.1	122 7 17.6	− 3.4
48	302 26	10.1	5.8	29.0	3.4	32	. .	364	. .	300	. .	79.1	57 29 27.9	. .	+ 1 30.1	108 37 19.2	− 0.9
49	282 34	14.2	8.7	3.5	6.9	28	. .	930	. .	885	. .	79.1	77 20 39.1	. .	+ 4 10.8	128 31 11.1	− 4.0

No.	Barom.	At. Ther.
	in.	°
2	30.08	48.2
3	30.125	54.0
14	30.14	64.0
18	30.13	65.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Sémi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
2	−12 2.8	− 15 31.7	. .	− 27 34.5
13	− 6.0	+ 15 55.6	. .	+ 15 49.6
14	− 6.0	− 15 55.6	. .	− 16 1.6
18	− 5.2	. . .	+ 0.1	− 5.1
29	− 12.2	+ 13.4	. .	+ 1.2

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Oct. 3	1	XX, 12	E.	51.6	54.3	55.9	2.4	4.7	7.0	13.5	15.2	18.0	31 4.73	− 1.02	. .	−44.07	20 30 19.64	− 2.84
	2	Saturn I, N.	E.	2.4	5.2	6.8	. .	. .	. .	24.0	25.6	28.4	42 15.40	− 1.01	. .	−44.08	20 41 30.31	. .
	3	Saturn II, S.	E.	. .	. .	12.3	14.5	16.7	18.8	21.1	. .	. .	42 16.68	− 1.01	. .	−44.08	20 41 31.59	. .
	4	μ Aquarii	E.	26.6	29.2	30.8	37.0	39.1	41.3	47.4	49.0	51.6	46 39.11	− 0.96	−44.14	−44.08	20 45 54.07	+ 0.13
4	5	1 Draconis	S.	. .	. .	. .	. .	. .	12.2	41.9	. .	. .	19 43.70	+ 1.83	. .	−44.52	9 19 1.01	+ 0.96
	6	α Hydræ	S.	57.9	0.4	2.0	8.1	10.1	12.3	18.4	20.0	22.6	22 10.20	− 1.10	−44.46	−44.52	9 21 24.58	− 0.09
	7	Moon II, S.	S.	35.3	37.9	39.7	46.2	48.6	50.9	57.4	59.1	1.9	29 48.56	− 0.87	. .	−44.52	9 29 3.17	−66.89
	8	ϵ Leonis	S.	15.0	17.7	19.5	26.1	28.4	30.6	37.5	39.0	41.8	39 28.40	− 0.83	−44.50	−44.52	9 38 43.05	− 0.08
	9	α Leonis	S.	13.6	16.0	17.9	24.0	26.0	28.0	34.4	36.0	38.6	2 26.06	− 0.94	−44.45	−44.53	10 1 40.59	− 0.12
	10	γ^1 Leonis	S.	34.8	37.7	39.2	. .	. .	. .	56.6	58.3	1.0	13 47.93	− 0.87	−44.55	−44.54	10 13 2.52	− 0.01
	11	γ^2 Leonis	S.	. .	. .	44.0	46.1	48.2	50.4	52.6	. .	. .	13 48.26	− 0.87	. .	−44.54	10 13 2.85	+ 0.32
	12	α Ursæ Majoris	S.	. .	. .	33.3	37.3	42.0	46.4	50.7	. .	. .	56 41.94	− 0.22	. .	−44.55	10 55 57.17	+ 0.17
	13	δ Leonis	S.	57.4	0.3	1.7	8.4	10.6	12.8	19.4	21.0	23.8	8 10.60	− 0.86	−44.53	−44.55	11 7 25.19	− 0.08
5	14	Sun I, S.	S.	37.3	39.7	41.4	47.5	49.7	51.7	57.8	59.5	2.0	44 49.62	− 1.07	. .	−44.58	12 44 3.97	. .
	15	Sun II, N.	S.	46.4	49.0	50.6	56.7	58.8	0.7	7.0	8.7	11.0	46 58.77	− 1.07	. .	−44.58	12 46 13.12	. .
	16	Polaris, S. P.	S.	. .	. .	16.0	49.0	23.0	56.5	33.0	. .	. .	14 23.50	−17.56	. .	−44.59	1 13 21.35	− 0.12
	17	Mercury I, N.	S.	. .	20.0	21.7	. .	. .	. .	38.6	40.0	42.7	55 30.08	− 1.14	. .	−44.60	13 54 44.34	+ 0.21
	18	Mercury II, S.	S.	. .	. .	26.1	28.3	30.5	32.6	34.7	. .	. .	55 30.44	− 1.14	. .	−44.60	13 54 44.70	− 0.15
	19	α Bootis	S.	28.0	30.7	32.3	38.7	40.9	43.2	49.6	51.2	53.9	10 40.94	− 0.87	−44.67	−44.61	14 9 55.46	+ 0.06
	20	ϵ Bootis	S.	0.9	4.2	5.7	12.7	15.1	17.2	24.1	25.9	28.8	40 14.96	− 0.80	−44.57	−44.61	14 39 29.55	− 0.06
	21	α Coronæ Borealis	S.	53.6	56.4	58.1	4.8	7.2	9.6	16.3	18.2	21.1	30 7.26	− 0.81	−44.65	−44.63	15 29 21.82	− 0.02
	22	α Serpentis	S.	37.9	40.5	42.0	48.2	50.3	52.4	58.5	0.0	2.5	38 50.26	− 0.98	−44.68	−44.63	15 38 4.65	+ 0.07
	23	Venus I, N.	S.	59.1	2.1	3.7	10.3	12.3	14.7	21.5	23.1	26.0	43 12.53	− 1.24	. .	−44.63	15 42 26.66	+ 1.01
	24	Venus II, S.	S.	. .	. .	9.3	11.6	13.8	16.2	18.3	. .	. .	43 13.84	− 1.24	. .	−44.63	15 42 27.97	− 0.30
	25	61^1 Cygni	S.	47.0	52.3	57.4	0.1	2.6	5.2	7.8	13.0	18.1	2 2.61	− 0.67	. .	−44.73	21 1 17.21	− 0.01
	26	61^2 Cygni	S.	48.6	53.7	58.9	1.6	4.0	6 7	9.4	14.5	19.6	2 4.11	− 0.67	. .	−44.73	21 1 18.71	+ 1.49
	27	ζ Cygni	S.	. .	. .	. .	. .	24.4	26.7	31.4	33.2	36.2	8 22.03	− 0.76	−44.77	−44.73	21 7 36.54	+ 0.05
	28	1 Pegasi	S.	50.5	54.7	59.1	1.2	3.5	5.8	7.9	12.0	16.5	17 3.47	− 0.86	−44.75	−44.74	21 16 17.87	− 0.04
	29	β Cephei (R.)	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	30	79 Draconis	S.	30.8	36.0	50.5	57.2	4.7	11.4	18.6	32.4	37.9	52 4.39	+ 0.41	. .	−44.74	21 51 20.06	+ 0.30
	31	α Aquarii (R.)	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
8	32	α Hydræ	S.	. .	. .	7.9	10.0	12.1	14.1	16.3	. .	. .	22 12.08	− 1.06	−46.28	−46.30	9 21 24.72	− 0.05
	33	β Leonis	S.	. .	. .	21.8	23.9	26.0	28.0	30.2	. .	. .	43 25.98	− 0.93	−46.37	−46.36	11 42 38.69	− 0.01
9	34	Sun I, N.	S.	17.6	20.0	21.7	27.9	29.8	31.8	38.2	39.8	42.3	59 29.90	− 1.04	. .	−46.41	12 58 42.45	. .
	35	Sun II, S.	S.	27.0	29.6	31.3	37.3	39.5	41.6	47.7	49.2	51.7	1 39.43	− 1.04	. .	−46.41	13 0 51.98	. .
	36	Polaris, S. P.	S.	. .	. .	10.0	47.5	19.0	. .	28.0	. .	. .	14 19.58	−11.36	. .	−46.41	1 13 21.81	+ 0.07
	37	Mercury I, N.	S.	40.2	42.8	44.6	. .	. .	. .	1.6	3.1	5.7	16 53.00	− 1.10	. .	−46.46	14 16 5.44	+ 0.24
	38	Mercury II, S.	S.	. .	. .	49.2	51.3	53.3	55.4	57.8	. .	. .	16 53.40	− 1.10	. .	−46.46	14 16 5.84	− 0.16
10	39	γ Aquilæ	Sk.	53.4	55.9	57.5	3 6	5.8	8.0	14.1	15.7	18.2	41 5.80	− 0.94	−46.86	−46.83	19 40 18.03	+ 0.06
	40	λ Ursæ Minoris	Sk.	. .	. .	. .	. .	16.0	6.5	55.0	. .	. .	50 16.63	+ 7.40	. .	−46.83	19 49 37.20	− 0.20
	41	B. A. C. 6962	Sk.	. .	. .	3.4	6.3	9.2	12.2	15.2	. .	. .	10 9.26	− 0.76	. .	−46.84	20 9 21.66	− 1.24
	42	B. A. C. 6983	Sk.	. .	. .	17.3	20.4	23.4	26.4	29.5	. .	. .	12 23.40	− 0.76	. .	−46.84	20 11 35.80	− 1.23
	43	α Pegasi	E.	7.3	9.9	11.5	17.8	19.9	22.0	28.3	30.0	32.5	59 19.91	− 0.96	−47.07	−47.11	22 58 31.84	− 0.01
	44	o Cephei	E.	45.9	52.7	56.7	12.7	17.9	23.4	39.3	43.2	50.0	14 17.98	− 0.63	. .	−47.12	23 13 30.23	− 0.33
	45	θ Piscium	E.	3.0	5.9	7.4	23.6	25.6	27.7	33.8	35.4	37.9	22 25.59	− 0.99	−47.06	−47.12	23 21 37.48	0.00
	46	λ Draconis, S. P.	E.	11.1	7.0	54.9	49.0	43.0	37.0	31.1	19.0	14.7	24 42.98	− 1.28	. .	−47.12	11 23 54.58	+ 0.15
	47	ι Piscium	E.	7.0	9.6	11.2	17.2	19.3	21.4	27.5	29.0	31.8	34 19.33	− 0.99	−47.13	−47.12	23 33 31.22	+ 0.01
	48	ω Piscium	E.	29.4	32.0	33.5	39.6	41.6	43.6	49.8	51.4	54.0	53 41.66	− 0.99	−47.15	−47.13	23 52 53.54	+ 0.03
	49	α Andromedæ	E.	29.6	32.5	34.3	41.2	43.7	45.9	52.8	54.6	57.6	2 43.58	− 0.91	−47.08	−47.13	0 1 55.54	− 0.03
	50	γ Pegasi	E.	23.4	26.0	27.7	34.0	36.1	38.2	44.5	46.2	48.8	7 36.10	− 0.96	−47.22	−47.13	0 6 48.01	+ 0.09

5, 12, 30, 31, 46. Bisections at sets B and D.
5. Telescope micrometer reading increased one revolution in reduction.
24. Telescope micrometer reading decreased one revolution in reduction.
29. Bisections at wires C_1, D_1, and D_3.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	299 18	10 20.4	14.6	8.7	12.2	34	. .	520	. .	510	. .	79.1	60 38 10.7	. .	+ 1 42.1	111 46 14.0	+ 1.7
2	301 50	9.1	5.3	28.7	2.5	35	275	. .	. .	. .	190	79.1	58 6 11.5	57.0	+ 1 32.2	109 14 4.9	. .
3	301 50	9.1	5.3	28.7	2.5	34	. .	425	. .	360	. .	79.1	58 5 58.8	. .	+ 1 32.2	109 13 52.2	. .
4	311 36	17.8	13.6	5.0	8.8	32	. .	815	. .	805	. .	79.1	48 19 42.0	. .	+ 1 4.8	99 27 8.0	− 0.8
5	42 54	8.9	4.7	28.4	2.7	33	410	362	. .	. .	. .	80.5	317 2 0.4	. .	− 53.6	8 7 28.0	− 0.2
6	312 56	1.3	29.7	21.9	28.5	31	. .	890	. .	830	. .	80.5	46 59 15.5	. .	+ 1 1.6	98 6 38.3	− 3.4
7	340 38	9 25.2	21.2	13.5	20.6	34	700	850	060	404	628	80.5	19 17 58.9	. .	+ 20.2	70 24 39.4	. .
8	345 24	10 7.0	11.4	26.5	2.0	35	. .	290	. .	240	. .	80.5	14 32 14.2	50.8	+ 14.9	65 38 50.3	− 0.5
9	333 38	0.3	29.2	21.4	27.2	35	. .	628	. .	600	. .	80.5	26 18 12.3	. .	+ 28.7	77 25 2.2	− 2.1
10	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
11	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
12	23 28	2.3	0.6	23.2	27.3	36	428	394	. .	352	384	80.5	336 28 25.5	53.7	− 25.5	27 34 21.2	− 2.4
13	342 16	9.8	6.9	29.1	4.9	36	. .	487	. .	435	. .	80.5	17 40 33.5	. .	+ 18.6	68 47 13.3	− 1.9
14	315 56	9 23.8	19.5	13.3	20.3	35	627	471	. .	. .	. .	80.5	44 0 3.5	57.8	+ 56.0	95 7 20.7	. .
15	316 28	24.5	21.2	13.5	20.0	35	. .	. .	. .	157	077	80.5	43 27 57.2	. .	+ 54.9	94 35 13.3	. .
16	52 22	10 2.7	29.5	23.3	27.6	32	090	. .	084	. .	123	80.5	307 33 19.4	58.6	− 1 15.2	358 38 25.4	− 2.1
17	308 0	2.8	29.9	22.8	0.9	37	962	. .	. .	. .	058	80.5	51 56 50.8	. .	+ 1 13.6	103 4 25.6	. .
18	308 0	2.8	29.9	22.8	0.9	38	. .	374	. .	524	. .	80.5	51 56 57.6	. .	+ 1 13.6	103 4 32.4	. .
19	340 54	0.4	28.0	19.2	27.3	38	. .	994	. .	870	. .	80.5	19 3 2.3	. .	+ 19.9	70 9 43.4	− 0.2
20	348 38	9 28.7	26.0	17.6	26.2	31	. .	467	. .	445	. .	80.5	11 17 6.3	. .	+ 11.5	62 23 39.0	− 0.6
21	348 12	10 6.7	4.2	26.9	2.9	38	. .	. .	. .	607	593	80 5	11 45 4.2	61.2	+ 12.0	62 51 37.4	+ 0.7
22	327 52	6.8	4.5	27.9	2.6	33	. .	. .	. .	120	. .	80.5	32 3 40.3	. .	+ 36.1	83 10 37.6	− 1.2
23	297 22	6.5	4.5	28.5	5.3	32	186	. .	. .	. .	158	80.5	62 33 25.9	. .	+ 1 50.5	113 41 37.6	. .
24	297 22	6.5	4.5	28.5	5.3	34	. .	947	. .	029	. .	80.5	62 33 53.8	. .	+ 1 50.5	113 42 5.5	. .
25	359 10	6.9	4.4	26.5	1.0	32	. .	092	. .	110	. .	80.3	0 45 23.6	. .	+ 0.8	51 51 45.6	− 1.6
26	359 10	6.9	4.4	26.5	1.0	32	. .	. .	. .	. .	683	80.3	0 45 33.3	. .	+ 0.8	51 51 55.3	+ 8.1
27	350 46	13.8	9.7	2.6	6.5	35	. .	. .	. .	998	976	80.3	9 10 29.5	. .	+ 9.5	60 17 0.2	− 1.9
28	340 18	7.4	3.6	24.8	1.5	30	. .	650	. .	626	. .	80.3	19 37 0.7	49.0	+ 21.0	70 43 42.9	− 0.3
29	148 50	13.7	11.1	3.1	6.5	36	292	. .	. .	351	306	80.3	211 6 34.2	. .	+ 35.5	19 59 11.5	− 1.4
30	34 8	11.9	6.5	29.6	2.7	32	590	. .	. .	. .	640	80.3	325 47 34.5	47.6	− 40.1	16 53 15.6	− 1.4
31	219 44	16.5	11.9	4.6	6.5	32	203	. .	180	. .	090	80.3	140 11 31.9	47.4	− 49.2	90 55 38.5	+ 1.1
32	312 56	10.3	8.3	28.8	6.5	31	. .	. .	. .	425	471	80.5	46 59 17.6	. .	+ 1 0.7	98 6 39.5	− 2.4
33	336 20	0.6	0.4	19.0	26.1	37	. .	. .	. .	. .	743	80.5	23 36 44.9	66.1	+ 24.6	74 43 30.7	+ 0.9
34	314 56	9 19.8	19.5	11.8	16.2	35	100	216	. .	. .	. .	80.5	44 59 55.0	69.0	+ 56.1	96 7 12.3	. .
35	311 24	26.5	27.5	18.5	22.0	35	. .	. .	. .	106	080	80.5	45 32 0.6	. .	+ 57.1	96 39 18.9	. .
36	52 22	10 12.8	9.8	1 2	4.2	31	560	. .	608	. .	648	80.5	307 33 20.5	. .	− 1 12.8	358 38 28.9	− 0.1
37	305 38	3.6	3.1	28.5	29.8	35	424	. .	. .	. .	448	80.5	54 18 13.5	. .	+ 1.17.9	105 25 52.6	. .
38	305 38	3.6	3.1	28.5	29.8	35	. .	918	. .	860	. .	80.5	54 18 20.5	. .	+ 1.17.9	105 25 59.6	. .
39	331 22	9 28.0	24.5	13.1	21.0	37	200	140	. .	. .	. .	80.5	28 34 30.4	. .	+ 30.7	79 41 22.3	− 0.8
40	49 56	10 0.5	24.0	15.2	21.0	30	. .	. .	323	315	335	80.5	309 58 47.1	62.2	− 1 7.1	1 4 1.2	− 0.4
41	7 28	9.0	5.0	26.3	0.9	31	832	885	. .	. .	. .	80.5	352 27 20.7	. .	− 7.5	43 33 34.4	+17.9
42	8 22	8.1	2.5	21.6	27.4	33	. .	. .	. .	760	763	80.5	351 33 47.7	. .	− 8.4	42 40 0.5	+18.1
43	335 34	7.5	4.2	24.0	29.5	31	. .	365	. .	360	. .	80.5	24 21 11.5	. .	+ 25.7	75 27 58.4	− 0.9
44	28 28	3.5	1.7	22.5	27.3	36	. .	265	. .	280	. .	80.3	331 28 24.8	. .	− 30.8	22 34 15.2	− 3.7
45	326 44	1.5	27.1	19.5	25.2	32	. .	790	. .	725	. .	80.5	33 11 27.3	. .	+ 37.1	84 18 25.6	− 0.4
46	70 58	7.5	3.0	25.2	29.0	33	115	. .	. .	. .	125	80.5	288 57 38.0	59.5	− 2 43.3	340 1 15.9	− 0.5
47	326 0	7.3	3.0	23.8	0.2	34	. .	780	. .	730	. .	80.5	33 56 3.1	. .	+ 38.2	85 3 2.5	− 0.9
48	327 14	2.5	29.2	20.0	27.0	37	. .	645	. .	615	. .	80.5	32 42 43.2	. .	+ 36.4	83 49 40.8	− 1.6
49	349 26	11.8	6.7	27.7	2.0	31	. .	995	. .	930	. .	80.5	10 29 24.0	. .	+ 10.5	61 35 55.7	− 0.7
50	335 32	5.0	0.0	22.3	29.0	34	. .	055	. .	045	. .	80.5	24 23 50.4	. .	+ 25.7	75 30 37.3	− 1.8

No.	Barom.	At. Ther.
	in.	°
2	30.14	61.0
8	30.37	49.5
14	30.33	56.0
30	30.22	51.0
33	29.98	63.0
34	29.98	65.0
40	29.73	64.8
46	29.77	62.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
2	− 0.8	− 6.4	. .	− 7.2
3	− 0.8	+ 6.4	. .	+ 5.6
7	−18 9.7	− 15 9.6	. .	− 33 19.3
14	− 6.1	− 16 3.7	. .	− 16 9.8
15	− 6.1	+ 16 3.7	. .	+ 15 57.6
17	− 5.4	+ 3.5	. .	− 1.9
18	− 5.4	− 3.5	+ 0.2	− 8.7
23	− 12.6	+ 14.2	. .	+ 1.6
24	− 12.6	− 14.2	+ 0.5	− 26.3
34	− 6.3	+ 16 3.3	. .	+ 15 57.0
35	− 6.2	− 16 3.3	. .	− 16 9.5
37	− 5.8	+ 3.6	. .	− 2.2
38	− 5.8	− 3.6	+ 0.2	− 9.2

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Oct. 12	1	B. A. C. 8213 . .	F.	. .	. .	32.1	6.2	42.3	16.2	50.9	. .	. .	28 41.54	+ 5.95	. .	−48.11	23 27 59.38	− 9.04
	2	Groombridge 4163	F.	. .	. .	. .	27.8	35.0	42.5	49.5	. .	. .	49 35.04	+ 0.40	. .	−48.12	23 48 47.32	− 0.06
	3	XXIII, 17 . . .	F.	. .	. .	. .	51.7	54.0	56.7	2.0	3.6	6.9	51 51.57	− 1.38	. .	−48.12	23 51 2.07	− 3.80
	4	*α* Andromedæ . .	F.	30.6	33.6	35.3	42.2	44.5	46.8	53.8	55.5	58.3	2 44.51	− 0.80	−48.12	−48.12	0 1 55.59	+ 0.02
	5	*γ* Pegasi	F.	. .	. .	32.6	34.8	37.0	39.1	41.2	. .	. .	7 36.94	− 0.92	−48.10	−48.13	0 6 47.89	− 0.03
	6	O, 9	F.	. .	. .	35.0	37.4	39.9	42.4	44.7	. .	. .	28 39.88	− 1.30	. .	−48.14	0 27 50.44	− 3.59
	7	O, 10	F.	30.0	33.0	34.5	41.4	43.5	45.6	52.5	54.0	56.8	30 43.48	− 1.22	. .	−48.14	0 29 54.12	− 3.42
	8	O, 11	F.	. .	. .	. .	. .	. .	. .	54.3	55.9	58.9	31 45.25	− 1.24	. .	−48.14	0 30 55.87	− 3.46
	9	*β* Ceti.	F.	55.6	58.3	59.9	6.3	8.6	10.7	17.3	18.9	21.4	38 8.56	− 1.18	−48.20	−48.14	0 37 19.24	+ 0.11
	10	B. A. C. 214 . .	F.	13.4	16.2	17.8	24.0	26.3	28.5	35.0	36.7	39.4	41 26.37	− 0.88	. .	−48.14	0 40 37.35	− 3.04
	11	32[1] Camelopard., S. P.	F.	51.5	25.3	11.6	. .	. .	. .	. .	. .	. .	48 51.70	− 4.97	. .	−48.15	12 47 58.58	− 8.36
	12	32[2] Camelopard., S. P.	F.	59.7	34.0	19.0	. .	. .	. .	. .	. .	. .	48 59.77	− 4.97	. .	−48.15	12 48 6.65	− 0.29
	13	*ε* Piscium . . .	F.	4.2	6.9	8.4	14.6	16.6	18.6	24.9	26.4	28.9	57 16.61	− 0.97	−48.21	−48.15	0 56 27.49	+ 0.08
	14	Polaris	F.	. .	. .	. .	24.0	53.0	18.0	50.0	. .	. .	13 53.02	+16.34	. .	−48.16	1 13 21.20	− 0.09
	15	*θ*[1] Ceti	F.	. .	. .	. .	. .	38.0	40.2	44.4	45.8	48.5	18 36.04	− 1.10	−48.19	−48.16	1 17 46.78	+ 0.05
	16	38 Cassiopeæ . . .	F.	. .	. .	34.3	40.4	46.2	52.0	57.9	. .	. .	22 46.16	+ 0.10	. .	−48.16	1 21 58.10	+ 0.19
	17	*o* Piscium . . .	F.	27.0	28.5	32.7	34.8	36.8	38.8	40.9	45.0	46.5	39 36.78	− 0.96	−48.16	−48.17	1 38 47.65	− 0.04
	18	*β* Arietis	F.	20.0	22.9	24.5	30.9	33.1	35.3	41.9	43.4	46.2	48 33.13	− 0.87	−48.13	−48.17	1 47 44.09	− 0.02
	19	Neptune	F.	. .	. .	43.2	45.1	47.2	49.3	51.4	. .	. .	53 47.24	− 0.95	. .	−48.17	1 52 58.12	. .
	20	*α* Arietis	F.	43.3	46.0	47.6	54.4	56.7	58.8	5.4	7.0	9.9	0 56.57	− 0.84	−48.09	−48.17	2 0 7.56	− 0.07
	21	*α* Ursæ Majoris . .	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .		. .	. .	. .		. .
	22	*δ* Leonis	S.	1.4	4.3	5.9	12.3	14.5	16.9	23.2	25.0	27.7	8 14.58	− 0.77	−48.44	−48.56	11 7 25.25	− 0.18
	23	*λ* Draconis . . .	S.	. .	. .	31.3	36.9	42.8	49.0	55.1	. .	. .	24 43.02	+ 0.29	. .	−48.57	11 23 54.74	+ 0.21
	24	*β* Leonis	S.	15.4	18.1	19.6	25.9	28.0	30.2	36.7	38.0	41.0	43 28.10	− 0.82	−48.54	−48.58	11 42 38.70	− 0.06
13	25	Groombridge 3241	S.	. .	. .	6.8	13.4	20.2	27.0	33.6	. .	. .	31 20.20	+ 0.44	. .	−48.75	20 30 31.89	− 0.10
	26	*μ* Aquarii. . . .	S.	31.2	33.7	35.2	41.6	43.8	45.9	52.0	53.6	56.1	46 43.68	− 1.02	−48.78	−48.75	20 45 53.91	+ 0.10
	27	12 Year Cat. 1879.	S.	. .	. .	35.4	47.7	59.0	11.9	23.9	. .	. .	53 59.58	+ 1.62	. .	−48.76	20 52 12.44	− 0.48
	28	61[1] Cygni	S.	50.8	54.1	55.9	1.2	3.6	6.4	16.8	. .	21.8	2 6.34	− 0.59	−48.72	−48.76	21 1 16.99	− 0.08
	29	61[2] Cygni	S.	52.4	55.6	57.5	2.5	5.3	7.9	18.2	. .	23.3	2 7.85	− 0.59	. .	−48.76	21 1 18.50	+ 1.43
	30	*α* Cephei (R.) . .	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .		. .	. .	. .		. .
	31	*β* Aquarii. . . .	S.	35.5	39.9	43.9	45.8	48.0	50.1	52.2	56.1	0.3	25 47.98	− 0.99	−48.86	−48.77	21 24 58.22	+ 0.12
	32	B. A. C. 7512 . .	S.	. .	. .	. .	54.5	57.7	1.2	4.5	10.9	13.4	30 57.87	− 0.38	. .	−48.77	21 30 8.72	− 1.72
	33	*ε* Pegasi	S.	39.6	42.2	43.7	49.8	51.8	53.8	0.2	1.8	4.3	38 51.91	− 0.87	−48.74	−48.78	21 38 2.26	− 0.03
	34	*μ* Capricorni. . .	S.	5.7	8.3	9.8	16.3	18.3	20.3	26.8	28.3	31.0	47 18.31	− 1.06	−48.85	−48.78	21 46 28.47	+ 0.10
	35	Polaris	S.	. .	. .	. .	. .	. .	. .	35.0	43.0	31.0	13 52.73	+17.87	. .	−48.85	1 13 21.75	− 0.72
	36	*η* Piscium . . .	S.	24.8	27.4	29.0	35.4	37.3	39.5	45.8	47.4	50.0	25 37.42	− 0.82	−48.87	−48.86	1 24 47.74	+ 0.08
	37	*o* Piscium (R.) . .	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .		. .	. .	. .		. .
	38	*β* Arietis	S.	. .	. .	29.5	31.6	33.6	36.1	38.2	. .	. .	48 33.80	− 0.78	−48.88	−48.87	1 47 44.15	+ 0.03
	39	50 Cassiopeæ . . .	S.	. .	. .	24.0	30.6	37.0	43.6	50.3	. .	. .	53 37.10	+ 0.42	. .	−48.87	1 52 48.65	+ 0.21
	40	*α* Arietis	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .		. .	. .	. .		. .
	41	5 Ursæ Minoris, S. P.	S.	. .	. .	55.4	46.6	38.1	29.3	20.4	. .	. .	28 37.96	− 2.76	. .	−48.86	14 27 46.34	+ 0.77
	42	*γ*[1] Ceti.	S.	27.0	29.5	31.0	. .	. .	. .	47.5	49.0	51.5	37 39.25	− 0.92	−48.84	−48.89	2 36 49.44	− 0.05
	43	*γ*[2] Ceti	S.	. .	. .	35.5	37.5	39.5	41.5	43.6	. .	. .	37 39.52	− 0.92	. .	−48.89	2 36 49.71	+ 0.22
	44	*β* Ursæ Minoris, S. P.	S.	. .	. .	. .	. .	54.1	46.6	38.8	. .	. .	51 54.23	− 2.56	. .	−48.89	14 51 2.78	+ 0.25
14	45	*β* Aquarii. . . .	Sk.	35.9	38.6	40.1	46.2	48.3	50.4	56.5	58.0	0.5	25 48.28	− 1.20	−48.96	−48.94	21 24 58.14	+ 0.05
	46	B. A. C. 7512 . .	Sk.	38.6	42.5	44.8	55.0	58.1	1.0	11.0	13.4	17.5	30 57.99	− 0.38	. .	−48.94	21 30 8.67	− 1.09
	47	*ε* Pegasi	Sk.	39.8	42.4	44.0	50.3	52.3	54.4	0.6	2.0	4.7	38 52.28	− 1.04	−48.95	−48.94	21 38 2.30	+ 0.02
	48	XXI, 17	Sk.	. .	. .	9.0	11.5	14.0	16.3	18.6	. .	. .	41 13.88	− 1.52	. .	−48.94	21 40 23.42	− 3.25
	49	*α* Aquarii. . . .	Sk.	59.2	1.7	3.4	9.4	11.5	13.5	19.6	21.0	23.7	0 11.44	− 1.14	−48.92	−48.95	21 59 21.35	0.00
	50	B. A. C. 7708 . .	Sk.	. .	. .	57.8	2.4	6.7	11.3	15.3	. .	. .	2 6.70	0.00	. .	−48.95	22 1 17.75	− 1.61

11, 12, 16, 23, 25, 39, 41, 44, 50. Bisections at sets B and D.
27. Bisections at set C.
30. Bisections at wires V and VI.
37. Bisections at wires II–VI.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	47 38	9 29.5	23.7	16.8	23.0	33	364	. .	350	. .	354	83.2	312 17 36.6	. .	− 1 4.6	3 22 53.2	+20.6
2	34 44	28.5	21.1	16.0	19.8	32	800	816	. .	800	792	83.2	325 11 28.0	. .	− 40.9	16 17 8.3	+ 2.0
3	283 42	26.7	21.5	15.1	22.5	34	. .	. .	. .	478	498	83.2	76 13 52.0	47.5	+ 3 55.8	127 24 9.0	+13.4
4	349 26	25.2	20.4	14.3	18.6	32	. .	714	. .	758	. .	83.2	10 29 23.6	. .	+ 10.9	61 35 55.7	− 0.3
5	335 32	24.5	18.5	11.4	19.3	34	. .	. .	. .	684	690	83.2	24 23 52.6	. .	+ 26.7	75 30 40.5	+ 1.6
6	290 4	26.7	21.5	15.8	22.2	33	. .	. .	. .	616	618	83.2	69 51 38.9	. .	+ 2 39.2	121 0 39.3	+17.4
7	297 32	26.2	21.6	14.2	20.5	33	200	310	. .	. .	. .	83.2	62 23 31.8	. .	+ 1 52.4	113 31 45.4	+18.5
8	295 36	10 3.2	25.7	20.7	27.7	30	. .	. .	. .	486	536	83.2	64 18 56.7	. .	+ 2 1.6	115 27 19.5	+18.3
9	302 24	6.3	0.8	25.2	1.0	36	. .	236	. .	262	. .	83.2	57 32 28.3	. .	+ 1 32.4	108 40 21.9	− 0.9
10	339 56	9 25.5	19.7	13.4	19.2	33	. .	276	. .	256	. .	83.2	19 59 31.5	. .	+ 21.4	71 6 14.1	+22.0
11	56 56	28.9	22.1	18.5	22.4	39	276	180	. .	. .	. .	83.2	303 1 5.5	. .	− 1 30.4	354 5 56.3	+21.7
12	56 56	28.9	22.1	18.5	22.4	37	996	970	. .	. .	. .	83.2	303 0 46.5	. .	− 1 30.4	354 5 37.3	+ 2.7
13	328 16	10 2.5	26.7	20.4	26.6	34	. .	660	. .	650	. .	83.2	31 39 59.8	. .	+ 36.3	82 36 57.3	+ 0.3
14	49 40	9 22.7	15.0	10.2	13.5	36	. .	622	620	620	. .	83.2	310 16 18.7	. .	− 1 9.4	1 21 30.5	+ 0.8
15	312 14	10 0.1	23.7	18.3	25.6	35	. .	950	. .	934	. .	83.2	47 42 17.3	. .	+ 1 4.7	98 49 43.2	+ 3.3
16	30 38	9 24.5	18.2	13.5	16.7	31	. .	358	. .	320	. .	83.2	329 17 0.7	. .	− 35.0	20 22 46.9	− 1.6
17	329 34	10 0.7	24.7	18.2	24.2	32	. .	174	. .	170	. .	83.2	30 21 19.7	46.8	+ 34.5	81 28 15.4	− 0.3
18	341 14	9 28.1	20.9	14.0	21.8	33	. .	000	. .	984	. .	83.2	18 41 29.0	. .	+ 20.0	69 48 10.2	+ 0.8
19	330 44	22.3	16.9	11.1	18.5	38	. .	. .	. .	030	016	83.2	29 12 42.4	. .	+ 33.0	80 19 36.6	. .
20	343 54	23.1	16.7	12.4	17.0	31	. .	620	. .	614	. .	83.2	16 1 4.1	46.2	+ 17.0	67 7 42.3	− 0.2
21	23 28	10 3.3	29.7	22.7	27.6	36	. .	. .	. .	440	350	83.2	336 28 29.6	51.2	− 25.5	27 34 25.3	− 1.0
22	342 16	16.7	13.2	5.7	11.5	36	. .	. .	. .	016	998	83.2	17 40 36.3	. .	+ 18.7	68 47 16.2	− 0.6
23	31 4	19.0	4.8	3.7	28.1	37	. .	900	. .	942	. .	83.2	328 52 57.5	. .	− 35.4	19 58 43.3	− 1.2
24	336 20	7.2	4.8	26.3	3.5	37	. .	038	. .	058	. .	83.2	23 36 43.0	51.9	+ 25.6	74 43 29.8	− 0.8
25	33 8	0.5	24.9	24.2	18.4	33	. .	627	. .	597	. .	83.2	326 47 41.9	. .	− 39.0	17 53 24.1	+ 1.6
26	311 36	14.5	8.7	2.0	9.0	32	. .	760	. .	680	. .	83.2	48 19 42.1	43.5	+ 1 6.9	99 27 10.2	+ 1.2
27	41 6	16.6	10.5	4.4	7.7	31	. .	699	. .	741	. .	83.2	318 49 28.2	. .	− 52.1	9 54 57.3	− 1.4
28	359 10	10.5	7.0	0.0	4.5	31	. .	800	. .	820	. .	83.2	0 45 25.5	43.2	+ 0.8	51 51 47.5	+ 1.3
29	359 10	10.5	7.0	0.0	4.5	32	. .	. .	. .	. .	220	83.2	0 45 32.5	. .	+ 0.8	51 51 54.5	+ 8.3
30	156 46	14.9	10.9	4.2	9.2	31	. .	. .	. .	668	642	83.2	203 9 27.0	. .	+ 25.6	27 56 28.6	− 2.7
31	314 56	16.8	10.6	3.6	9.7	33	. .	486	. .	340	. .	83.2	44 59 54.4	. .	+ 59.8	96 7 15.4	− 0.9
32	12 10	18.3	12.5	6.2	10.2	30	. .	. .	. .	700	674	83.2	347 45 15.3	41.4	− 13.0	38 51 23.5	+22.1
33	330 20	13.2	7.7	0.5	7.6	29	. .	740	. .	730	. .	83.2	29 34 55.2	. .	+ 34.0	80 41 50.4	+ 0.2
34	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .		. .	. .
35	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .		. .	. .
36	335 44	12.6	7.2	0.8	6.2	30	. .	. .	. .	346	268	83.2	24 11 3.9	38.3	+ 27.1	75 17 52.2	− 0.6
37	210 18	5.2	29.9	23.6	29.0	36	996	036	040	050	038	83.2	149 38 39.0	. .	− 35.3	81 28 17.5	+ 1.9
38	341 14	18.9	13.8	6.7	13.6	31	. .	. .	. .	. .	390	83.2	18 41 27.2	. .	+ 20.4	69 48 8.8	− 0.5
39	32 50	5.6	0.1	23.5	29.2	32	. .	123	. .	087	. .	83.2	327 5 22.4	. .	− 38.1	18 11 5.5	− 3.9
40	343 54	12.1	6.9	29.8	5.1	30	. .	. .	. .	257	197	83.2	16 1 2.0	. .	+ 17.3	67 7 40.2	− 2.2
41	64 46	15.5	8.1	3.8	7.5	37	740	. .	686	. .	. .	83.2	295 10 58.6	. .	− 2 7.6	346 15 12.2	+ 0.4
42	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .		. .	. .
43	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .		. .	. .
44	66 20	5.5	27.8	22.7	28.5	34	. .	790	. .	754	. .	83.2	293 36 3.6	37.8	− 2 17.4	344 40 7.4	+ 1.9
45	314 56	2.5	26.0	20.5	25.7	34	. .	362	. .	285	. .	84.6	44 59 55.7	. .	+ 1 0.2	96 7 17.1	+ 0.8
46	12 10	9 29.0	23.5	17.6	22.0	31	. .	750	. .	732	. .	84.6	347 45 13.4	. .	− 13.1	38 51 21.5	+22.2
47	330 20	10 0.6	24.0	17.3	26.4	30	537	498	. .	. .	. .	84.6	29 34 55.5	. .	+ 34.2	80 41 50.9	+ 0.7
48	289 36	9.0	2.0	26.0	3.4	32	. .	. .	. .	630	640	84.6	70 19 36.3	39.2	+ 2 47.2	121 28 44.7	+ 3.3
49	320 8	11.0	5.0	26.9	3.4	35	750	750	. .	. .	. .	84.6	39 48 25.1	. .	+ 50.3	90 55 36.6	− 1.1
50	22 42	3.0	27.6	21.4	26.4	32	. .	. .	. .	890	985	84.6	337 13 35.6	. .	− 25.3	28 19 31.5	+23.4

No.	Barom.	At. Ther.
	in.	°
3	30.16	50.5
17	30.16	48.5
20	30.17	48.0
21	30.27	50.2
28	30.32	46.0
44	30.30	41.0
45	30.37	43.5

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
19	− 0.1	. .	. .	− 0.1

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Oct. 14	1	B. A. C. 7749 . .	Sk.	. .	. .	12.8	16.6	20.0	24.2	28.0	. .	. .	7 20.32	− 0.16	. .	−48.95	22 6 31.21	− 1.95
	2	B. A. C. 7782 . .	Sk.	22.7	27.5	30.6	40.8	. .	48.8	52.3	. .	. .	12 44.97	− 0.20	. .	−48.95	22 11 55.82	− 2.02
	3	B. A. C. 7807 . .	Sk.	. .	. .	23.8	25.9	28.2	30.3	32.6	. .	. .	18 28.16	− 0.91	. .	−48.95	22 17 38.30	− 2.46
	4	B. A. C. 7846 . .	Sk.	. .	. .	11.1	14.5	17.9	21.4	24.7	. .	. .	25 17.92	− 0.30	. .	−48.95	22 24 28.67	− 2.18
	5	XXII, 8 . . .	Sk.	20.1	23.0	24.9	31.7	34.2	36.5	43.5	45.2	48.1	31 34.13	− 1.49	. .	−48.95	22 30 43.69	− 3.39
	6	XXII, 11 . . .	Sk.	29.7	33.0	34.9	42.7	45.3	47.8	55.7	57.7	0.8	36 45.29	− 1.63	. .	−48.96	22 35 54.70	− 3.70
	7	XXIII, 17 . . .	Sk.	37.0	40.3	42.4	47.3	49.9	52.5	55.0	57.6	. .	51 52.44	− 1.62	. .	−48.96	23 51 1.86	− 3.79
	8	Anonymous . .	Sk.	. .	. .	58.3	0.9	3.3	6.0	11.0	13.0	16.3	53 0.81	− 1.62	. .	−48.96	23 52 10.23	− 3.80
	9	δ Leonis . . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .
	10	β Leonis . . .	E.	. .	. .	24.8	26.9	29.1	31.4	33.4	. .	. .	43 29.12	− 1.02	−49.33	−49.36	11 42 38.74	− 0.05
	11	12 Canum Venat. .	E.	. .	. .	. .	58.5	1.0	3.6	8.8	10.9	14.0	50 58.37	− 0.70	−49.21	−49.37	12 50 8.30	− 0.16
	12	Polaris, S. P. .	E.	. .	. .	34.5	4.0	41.5	12.0	50.0	. .	. .	14 40.40	−24.86	. .	−49.38	1 13 26.16	+ 3.49
15	13	Sun I, S. . . .	E.	32.4	35.0	36.5	42.8	44.9	46.8	53.2	54.9	57.3	32 44.87	− 1.29	. .	−49.39	13 31 54.19	. .
	14	Sun II, N. . .	E.	43.0	45.5	47.0	53.4	55.4	57.4	3.7	5.1	7.8	34 55.37	− 1.29	. .	−49.39	13 34 4.69	. .
	15	α Draconis . . .	E.	18.0	24.3	28.0	42.3	47.2	52.0	6.3	10.1	16.1	1 47.14	+ 0.07	. .	−49.40	14 0 57.81	− 0.03
	16	α Bootis . . .	E.	32.7	35.4	37.0	43.5	45.7	47.9	54.4	56.0	58.5	10 45.68	− 0.97	−49.31	−49.40	14 9 55.31	− 0.09
	17	ε Bootis . . .	E.	5.8	8.9	10.6	17.4	19.7	21.9	28.9	30.7	33.6	40 19.72	− 0.87	−49.31	−49.41	14 39 29.44	− 0.12
	18	Mercury I, C. .	E.	37.9	40.6	42.2	48.8	50.9	53.0	59.6	1.2	3.9	47 50.90	− 1.41	. .	−49.41	14 47 0.09	+ 0.20
	19	β Ursæ Majoris .	E.	. .	. .	. .	50.6	58.5	6.4	21.8	27.6	37.5	51 50.88	+ 0.92	. .	−49.41	14 51 2.39	− 0.09
	20	β Bootis . . .	E.	46.1	49.5	51.5	59.7	2.5	5.0	13.4	15.1	18.6	58 2.38	− 0.67	. .	−49.41	14 57 12.30	− 0.14
	21	β Libræ . . .	E.	52.7	55.3	57.0	3.0	5.1	7.3	13.4	15.0	17.6	11 5.16	− 1.30	−49.40	−49.41	15 10 14.45	− 0.01
	22	μ¹ Bootis . . .	E.	18.7	21.8	23.8	. .	. .	. .	44.5	46.4	49.6	20 34.13	− 0.72	−49.28	−49.42	15 19 43.99	− 0.15
	23	γ² Ursæ Minoris .	E.	. .	. .	. .	. .	. .	. .	8.9	14.4	22.8	21 42.39	+ 0.63	. .	−49.42	15 20 53.60	− 0.36
	24	α Coronæ Borealis .	E.	58.2	1.0	2.8	9.5	11.9	14.3	21.0	22.9	25.7	30 11.92	− 0.88	−49.34	−49.42	15 29 21.62	− 0.08
	25	α Serpentis . . .	E.	42.7	45.3	46.9	53.0	55.0	57.0	3.4	4.8	7.4	38 55.06	− 1.12	−49.42	−49.43	15 38 4.51	+ 0.01
	26	ε Serpentis . . .	E.	11.6	14.0	15.7	21.5	23.5	25.5	31.8	33.4	35.8	45 23.64	− 1.14	−49.52	−49.43	15 44 33.07	+ 0.09
	27	Venus I, N. . .	E.	49.7	52.7	58.9	1.2	3.7	5.8	8.0	14.2	17.3	21 3.50	− 1.51	. .	−49.43	16 20 12.56	+ 1.18
	28	α Scorpii . . .	E.	19.5	22.3	24.0	30.9	33.0	35.4	42.1	43.7	46.7	22 33.07	− 1.51	−49.39	−49.43	16 21 42.13	− 0.05
	29	ζ Ophiuchi . . .	E.	52.6	55.1	56.8	3.0	5.0	7.1	13.3	15.0	17.5	31 5.04	− 1.31	−49.34	−49.44	16 30 14.29	− 0.10
	30	η Herculis . . .	E.	9.2	12.5	14.5	22.3	25.0	27.7	35.6	37.4	40.9	39 25.01	− 0.70	−49.41	−49.44	16 38 34.87	− 0.02
	31	κ Ophiuchi . . .	E.	21.4	24.0	25.4	31.7	33.8	35.8	41.9	43.5	45.9	52 33.71	− 1.09	−49.41	−49.44	16 51 43.18	+ 0.01
	32	ε Ursæ Minoris. .	E.	4.0	23.5	34.0	19.5	34.5	50.0	35.5	47.0	5.5	59 34.83	+ 3.02	. .	−49.44	16 58 48.41	− 0.07
	33	α¹ Herculis . . .	E.	33.0	35.6	37.2	43.3	45.6	47.7	54.0	55.6	58.3	9 45.59	− 1.03	−49.46	−49.44	17 8 55.12	+ 0.04
	34	Moon I. . . .	E.	55.7	58.7	0.5	7.6	9.9	12.4	19.5	21.3	24.2	20 9.98	− 1.54	. .	−49.44	17 19 19.00	+70.25
	35	α Ophiuchi . . .	E.	44.0	46.8	48.3	54.6	56.7	58.8	5.0	6.7	9.2	29 56.68	− 1.06	−49.40	−49.45	17 29 6.17	− 0.02
	36	α Cygni	E.	42.3	45.9	47.9	56.9	59.8	2.8	11.3	13.5	17.2	37 59.73	− 0.51	−49.65	−49.50	20 37 9.72	+ 0.17
	37	Saturn I, N. . .	E.	56.7	59.4	1.0	. .	. .	. .	18.5	20.0	22.7	42 9.72	− 1.37	. .	−49.50	20 41 18.85	. .
	38	Saturn II, S. . .	E.	. .	. .	6.6	8.9	11.0	13.4	15.5	. .	. .	42 11.08	− 1.37	. .	−49.50	20 41 20.21	. .
	39	XX, 17	E.	11.6	14.6	16.4	23.4	25.8	28.3	35.3	37.2	40.3	45 25.88	− 1.52	. .	−49.50	20 44 34.86	− 2.93
	40	B. A. C. 7253 . .	E.	22.3	25.8	27.9	36.2	39.0	41.9	50.5	52.6	56.3	49 39.17	− 0.53	. .	−49.50	20 48 49.14	− 1.48
	41	B. A. C. 7259 . .	E.	0.6	4.2	6.3	14.9	17.6	20.5	28.9	31.0	34.6	50 17.62	− 0.53	. .	−49.50	20 49 27.59	− 1.48
	42	61¹ Cygni	E.	51.7	54.9	56.9	. .	. .	. .	17.7	19.5	22.7	2 7.23	− 0.64	−49.60	−49.51	21 1 17.08	+ 0.05
	43	61² Cygni	E.	. .	. .	3.5	. .	8.8	11.5	13.9	. .	. .	2 8.78	− 0.64	. .	−49.51	21 1 18.63	+ 1.60
	44	ζ Cygni	E.	12.4	15.4	17.3	24.4	26.7	29.0	35.9	37.7	40.7	8 26.61	− 0.78	−49.49	−49.51	21 7 36.32	− 0.01
	45	1 Draconis, S. P. .	E.	. .	. .	25.5	10.5	56.0	41.5	26.5	. .	. .	19 56.00	− 5.48	. .	−49.51	9 19 1.01	− 0.68
	46	d Ursæ Majoris, S. P.	E.	42.2	37.8	25.4	19.0	13.3	7.3	1.0	49.0	44.2	24 13.24	− 2.86	. .	−49.51	9 23 20.87	− 0.14
	47	β Aquarii. . . .	E.	36.5	39.0	40.7	46.7	48.8	50.9	57.0	58.6	1.1	25 48.81	− 1.21	−49.49	−49.51	21 24 58.09	+ 0.01
	48	XXI, 10 . . .	E.	51.8	55.4	57.4	5.4	8.1	10.8	18.6	20.6	24.1	32 8.02	− 1.68	. .	−49.51	21 31 16.83	− 3.49
	49	ε Pegasi	E.	40.4	43.0	44.8	50.9	52.9	55.0	1.0	2.6	5.3	38 52.88	− 1.04	−49.56	−49.52	21 38 2.32	+ 0.05
	50	B. A. C. 7571 . .	E.	. .	. .	. .	. .	. .	.	58.0	59.7	2.5	39 48.99	− 0.84	. .	−49.52	21 38 58.63	− 2.17

1, 2, 4, 32, 46. Bisections at sets B and D.
15, 45. Bisections at set C.
19. Bisections at wires V and VI.
35. Telescope micrometer reading decreased one revolution in reduction.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	18 36	10 19.2	12.5	7.0	8.7	28	. .	. .	. .	650	660	84.6	341 18 44.8	. .	— 20.4	32 24 45.6	+23.4
2	17 38	11.3	5.5	29.5	1.9	34	. .	. .	. .	142	162	84.6	342 18 1.6	. .	— 19.3	33 24 3.5	+23.5
3	341 16	11.1	5.0	28.1	3.3	34	. .	930	. .	935	. .	84.6	18 40 13.3	. .	+ 20.4	69 46 54.9	+19.5
4	14 38	9.0	3.8	28.4	2.1	31	872	860	. .	. .	. .	84.6	345 17 25.2	. .	— 15.9	36 23 30.5	+23.5
5	291 22	4.1	26.8	20.4	28.4	29	882	869	. .	. .	. .	84.6	68 32 48.2	. .	+ 2 32.6	119 41 42.0	+ 8.0
6	282 48	11.9	5.5	29.3	24.5	37	. .	722	. .	670	. .	84.6	77 8 53.7	. .	+ 4 19.5	128 19 34.4	+ 6.2
7	283 42	14.3	7.6	1.5	5.6	32	944	910	. .	. .	. .	84.6	76 13 44.6	37.2	+ 4 2.7	127 24 8.5	+13.0
8	283 32	5.0	29.4	23.4	29.4	34	. .	. .	. .	461	500	84.6	76 24 1.7	. .	+ 4 6.0	127 34 28.9	+13.1
9	342 16	2.6	28.8	22.6	29.2	36	. .	830	. .	800	. .	83.7	17 41 35.2	. .	+ 18.6	68 48 15.0	− 2.2
10	336 20	9 27.0	23.8	18.4	23.4	37	. .	. .	. .	775	760	83.7	23 36 45.0	. .	+ 25.4	74 43 31.6	+ 0.7
11	0 2	10 11.9	9.2	3.5	5.6	33	. .	. .	. .	260	230	83.7	359 53 50.4	58.0	— 0.1	51 0 11.5	− 1.1
12	52 22	9.3	5.3	1.1	3.7	31	775	. .	710	. .	780	83.7	307 33 23.9	. .	— 1 15.5	358 38 29.6	− 1.7
13	312 8	29.6	25.9	20.2	26.4	29	535	560	. .	. .	. .	83.7	47 47 11.0	. .	+ 1 3.9	98 54 36.1	. .
14	312 40	11 0.7	27.5	23.2	29.9	28	. .	. .	. .	630	730	83.7	47 14 59.8	. .	+ 1 2.7	98 22 23.7	. .
15	26 0	10 11.9	6.5	0.3	5.2	32	220	. .	. .	. .	200	83.7	333 55 32.2	. .	— 28.3	25 1 25.1	− 4.0
16	340 54	13.5	8.0	3.2	8.8	38	135	130	. .	130	125	83.7	19 3 5.5	. .	+ 20.0	70 9 46.7	+ 1.1
17	348 38	19.0	14.5	9.7	14.2	30	. .	180	. .	100	. .	83.7	11 17 9.1	. .	+ 11.5	62 23 41.8	0.0
18	302 32	14.0	8.0	5.8	11.5	31	. .	950	. .	925	. .	83.7	57 23 31.8	. .	+ 1 30.0	108 31 23.0	. .
19	35 42	11.5	7.7	4.3	5.3	34	. .	. .	790	810	. .	83.7	324 14 14.1	. .	— 41.6	15 19 53.7	− 1.3
20	1 56	15.8	14.8	9.1	10.9	35	. .	280	. .	260	. .	83.7	358 0 26.0	61.5	— 2.0	49 6 45.2	− 0.6
21	312 8	17.7	13.2	11.0	15.0	32	. .	380	. .	330	. .	83.7	47 47 42.6	. .	+ 1 3.5	98 55 7.3	+ 0.9
22	358 52	9.0	6.7	2.8	5.2	35	. .	970	. .	075	. .	83.7	1 4 30.8	. .	+ 1.1	52 10 53.1	+ 2.8
23	33 18	17.6	14.0	11.5	12.8	31	. .	. .	. .	080	170	83.7	326 37 25.6	. .	— 38.0	17 43 8.8	+ 1.6
24	348 12	11.1	6.7	3.2	6.1	38	. .	205	. .	185	. .	83.7	11 45 4.8	. .	+ 12.0	62 51 38.0	− 0.6
25	327 52	6.5	3.6	1.7	4.9	33	. .	075	. .	020	. .	83.7	32 3 43.3	. .	+ 36.1	83 10 40.6	+ 0.8
26	325 54	11.2	8.1	6.0	8.8	32	. .	150	. .	135	. .	83.7	34 1 33.7	. .	+ 38.9	85 8 33.8	− 0.4
27	295 2	9.0	5.3	3.8	6.2	35	. .	630	. .	690	. .	83.7	64 54 25.0	. .	+ 2 2.5	126 2 48.7	. .
28	294 56	16.9	15.0	11.2	12.7	36	. .	615	. .	665	. .	83.7	65 0 47.9	. .	+ 2 3.0	116 9 12.1	+ 0.2
29	310 44	10.0	8.3	4.8	7.3	31	. .	045	. .	040	. .	83.7	49 11 15.9	. .	+ 1 6.7	100 18 43.8	+ 1.9
30	0 12	9.8	8.3	4.0	4.3	33	. .	360	. .	310	. .	83.7	359 43 50.3	. .	— 0.3	50 50 11.2	+ 1.6
31	330 38	16.9	14.5	12.0	13.2	36	. .	625	. .	580	. .	83.7	29 18 47.7	. .	+ 32.4	80 25 41.3	+ 2.0
32	43 16	17.8	13.7	9.3	10.3	33	700	. .	. .	. .	560	83.7	316 40 1.4	. .	— 54.3	7 45 28.3	+ 0.4
33	335 34	12.3	9.2	6.2	9.8	30	. .	160	. .	150	. .	83.7	24 21 4.2	. .	+ 26.1	75 27 51.5	+ 0.3
34	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. . .	. .
35	333 42	7.5	5.0	1.3	3.0	34	. .	665	. .	955	. .	83.7	26 13 55.0	61.5	+ 28.4	77 20 44.6	− 1.4
36	5 52	16.6	11.6	5.2	7.8	32	. .	000	. .	980	. .	84.1	354 3 33.9	. .	— 6.2	45 9 48.9	− 0.2
37	301 50	13.0	7.2	1.5	6.0	35	995	. .	. .	. .	910	84.1	58 6 30.6	48.0	+ 1 34.8	109 14 26.6	. .
38	301 50	13.0	7.2	1.5	6.0	36	. .	970	. .	870	. .	84.1	58 6 45.5	. .	+ 1 34.8	109 14 41.5	. .
39	289 54	20.2	14.5	8.2	14.7	29	. .	510	. .	485	. .	84.1	70 0 59.3	. .	+ 2 41.2	121 10 1.7	− 1.3
40	4 56	19.7	15.7	10.7	13.3	28	480	395	. .	. .	. .	84.1	354 58 43.9	. .	— 5.2	46 4 59.9	+20.0
41	4 56	19.7	15.7	10.7	13.3	28	. .	. .	. .	910	900	84.1	354 58 51.7	. .	— 5.2	46 5 7.7	+20.0
42	359 10	15.0	9.6	4.2	8.0	31	410	. .	. .	. .	415	84.1	0 45 24.2	. .	+ 0.8	51 51 46.2	+ 0.2
43	359 10	15.0	9.6	4.2	8.0	32	. .	020	. .	055	. .	84.1	0 45 33.4	. .	+ 0.8	51 51 55.4	− 0.6
44	350 46	21.2	17.0	10.2	13.9	35	. .	385	. .	340	. .	84.1	9 10 30.6	. .	+ 9.6	60 17 1.4	+ 0.2
45	59 8	21.3	14.5	11.5	14.5	32	400	. .	. .	. .	385	84.1	300 47 44.8	. .	— 1 39.1	351 52 26.9	− 2.4
46	70 36	16.5	10.7	7.1	10.2	29	980	. .	. .	. .	025	84.1	289 19 3.7	. .	— 2 47.4	340 22 37.5	+ 0.1
47	314 56	22.5	15.5	11.5	15.0	33	. .	145	. .	085	. .	84.1	44 59 56.6	. .	+ 59.2	96 7 17.0	+ 0.7
48	281 2	19.2	13.0	8.3	11.8	35	. .	400	. .	345	. .	84.1	78 54 27.8	. .	+ 4 53.5	130 5 42.5	− 0.3
49	330 20	13.5	7.3	1.6	6.2	29	. .	755	. .	750	. .	84.1	29 34 56.2	. .	+ 33.6	80 41 51.0	+ 0.9
50	346 6	22.4	15.2	11.5	12.1	29	. .	. .	. .	790	700	84.1	13 49 4.8	. .	+ 14.6	64 55 40.6	+18.9

No.	Barom.	At. Ther.
	in.	°
7	30.38	42.5
11	30.42	51.5
20	30.39	58.5
35	30.35	58.5
37	30.32	51.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
13	— 6.6	— 16 6.2	. .	— 16 12.8
14	— 6.5	+ 16 6.2	. .	+ 15 59.7
18	— 6.4	. .	+ 0.3	— 6.1
27	— 14.5	+ 15.6	. .	+ 1.1
37	— 0.8	+ 7.4	. .	+ 6.6
38	— 0.8	— 7.4	. .	— 8.2

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Oct. 15	1	μ Capricorni. . .	E.	6.6	9.2	10.8	17.0	19.1	21.2	27.7	29.1	31.9	47 19.18	− 1.30	−49.51	−49.52	21 46 28.36	+ 0.02
	2	79 Draconis . . .	E.	. .	. .	54.0	1.2	8.3	15.4	22.3	. .	. .	52 8.24	+ 0.91	. .	−49.52	21 51 19.63	+ 0.45
	3	α Aquarii. . . .	E.	59.8	2.5	3.9	10.1	12.3	14.4	20.3	21.8	24.4	0 12.17	− 1.15	−49.65	−49.52	21 59 21.50	+ 0.16
	4	ω Piscium . . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	5	γ Pegasi	E.	25.7	28.4	30.1	36.4	38.5	40.7	47.0	48.7	51.2	7 38.52	− 0.98	−49.62	−49.55	0 6 47.99	+ 0.07
	6	β Cetii	E.	57.2	59.9	1.6	7.9	10.2	12.4	18.7	20.3	23.0	38 10.13	− 1.36	−49.58	−49.56	0 37 19.21	+ 0.07
	7	ϵ Piscium . . .	E.	5.8	8.3	9.9	16.0	18.1	20.1	26.3	27.9	30.5	57 18.10	− 1.06	−49.60	−49.56	0 56 27.48	+ 0.06
	8	Polaris	E.	. .	. .	58.0	22.5	51.0	18.0	43.0	. .	. .	13 50.50	+24.99	. .	−49.57	1 13 25.92	+ 3.20
	9	θ^1 Ceti . . .	E.	25.2	27.9	29.4	35.5	37.6	39.7	45.8	47.4	50.0	18 37.61	− 1.24	−49.60	−49.57	1 17 46.80	+ 0.05
	10	η Piscium . . .	E.	25.6	28.2	29.9	36.1	38.3	40.5	46.8	48.4	51.1	25 38.32	− 0.97	−49.61	−49.57	1 24 47.78	+ 0.11
	11	Parthenope . .	E.	. .	. .	55.6	57.6	59.5	1.6	. .	7.4	9.8	29 57.57	− 1.13	. .	−49.58	1 29 6.86	. .
	12	ξ^1 Ceti	E.	0.9	3.4	5.0	11.2	13.3	15.3	21.5	23.1	25.6	7 13.26	− 1.05	−49.67	−49.59	2 6 22.62	+ 0.12
	13	γ Ceti	E.	28.1	30.6	32.1	38.3	40.4	42.3	48.5	50.0	52.7	37 40.33	− 1.11	−49.70	−49.59	2 36 49.63	+ 0.11
16	14	Moon I. N. . .	F.	26.3	29.3	31.1	38.3	40.7	43.1	50.4	52.2	55.0	17 40.71	− 1.52	. .	−49.70	18 16 49.49	+71.62
	15	1 Aquilæ	F.	. .	. .	9.5	11.5	13.6	15.7	17.7	. .	. .	29 13.60	− 1.26	−49.67	−49.70	1 28 22.64	+ 0.04
	16	α Lyræ	F.	15.9	19.2	21.1	29.0	31.7	34.3	42.0	44.0	47.2	33 31.60	− 0.65	−49.87	−49.70	18 32 41.25	+ 0.19
	17	β Lyræ	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	18	ζ Aquilæ. . . .	F.	16.7	19.3	20.9	27.1	29.2	31.4	37.7	39.3	41.9	0 29.28	− 1.01	−49.70	−49.71	18 59 38.56	+ 0.07
	19	B. A. C. 6589 . .	F.	26.9	29.7	31.2	37.9	40.1	42.3	48.8	50.5	53.1	11 40.06	− 0.91	. .	−49.71	19 10 49.44	− 1.35
	20	B. A. C. 6659 . .	F.	. .	. .	. .	. .	. .	. .	9.0	11.4	15.4	20 56.31	− 0.40	. .	−49.72	19 20 6.19	− 0.56
	21	O. Arg. N. 19238 .	F.	46.2	50.2	52.7	2.1	5.5	8.5	18.2	20.4	24.5	22 5.37	− 0.40	. .	−49.72	19 21 15.25	− 0.57
	22	B. A. C. 6717 . .	F.	. .	. .	58.3	1.2	4.3	7.5	10.8	. .	. .	31 4.42	− 0.42	. .	−49.72	19 30 14.28	− 0.68
	23	B. A. C. 6721 . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	24	B. A. C. 6763[1]. .	F.	. .	. .	. .	. .	. .	. .	31.6	33.9	38.0	39 18.85	− 0.39	. .	−49.72	19 38 28.74	− 0.69
	25	B. A. C. 6763[2]. .	F.	. .	. .	. .	. .	. .	. .	34.5	36.6	40.9	39 21.68	− 0.39	. .	−49.72	19 38 31.57	− 0.69
	26	XIX, 14 . . .	F.	25.1	29.6	34.0	36.4	38.6	40.8	43.1	47.5	52.0	47 38.57	− 1.47	. .	−49.73	19 46 47.37	− 2.40
	27	λ Ursæ Minoris . .	F.	. .	. .	. .	. .	. .	26.0	0.0	. .	46.0	49 45.03	+33.00	. .	−49.73	19 49 28.30	− 0.88
	28	3 Ursæ Majoris, S. P.	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	29	XX, 3	F.	5.0	8.0	9.6	16.3	18.6	20.9	27.6	29.2	32.0	12 18.58	− 1.46	. .	−49.74	20 11 27.38	− 2.54
	30	κ Cephei	F.	. .	. .	33.0	42.9	52.0	1.2	11.0	. .	. .	13 52.02	+ 1.68	. .	−49.74	20 13 3.96	+ 0.20
	31	π Capricorni. . .	F.	49.7	51.4	55.7	57.8	0.0	2.1	4.2	8.6	10.3	20 59.98	− 1.39	−49.66	−49.74	20 20 8.85	− 0.05
	32	ϵ Delphini . . .	F.	. .	. .	0.3	2.4	4.5	6.5	8.6	. .	. .	28 4.46	− 1.04	−49.84	−49.74	20 27 13.68	+ 0.15
	33	Groombridge 3241	F.	41.0	49.9	54.4	14.6	21.3	28.0	47.8	52.6	0.9	31 21.17	+ 0.82	. .	−49.74	20 30 32.25	+ 0.48
	34	B. A. C. 7169 . .	F.	. .	. .	. .	13.4	26.4	39.4	. .	. .	. .	35 26.40	+ 2.87	. .	−49.74	20 34 39.53	+ 2.58
	35	B. A. C. 7178 . .	F.	. .	. .	. .	. .	1.0	13.6	39.5	49.2	5.8	36 47.45	+ 2.87	. .	−49.74	20 36 0.58	+ 2.52
	36	Saturn S. . . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	37	Saturn N. . . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	38	B. A. C. 7253 . .	F.	22.1	25.8	27.9	36.4	39.3	42.0	50.5	52.7	56.0	49 39.19	− 0.54	. .	−49.74	20 48 48.91	− 1.46
	39	B. A. C. 7259 . .	F.	. .	. .	12.0	15.0	17.7	20.5	23.3	. .	. .	50 17.70	− 0.54	. .	−49.74	20 49 27.42	− 1.46
	40	12 Yr. Cat. 1879 .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	41	ζ Cygni	F.	12.8	15.7	17.5	24.5	26.9	29.3	36.4	38.1	41.0	8 26.91	− 0.80	−49.79	−49.75	21 7 36.36	+ 0.05
	42	α Cephei	F.	. .	. .	16.5	21.0	25.3	29.7	34.2	. .	. .	16 25.34	+ 0.05	. .	−49.75	21 15 35.64	+ 0.21
	43	1 Pegasi	F.	. .	. .	3.9	6.2	8.3	10.5	12.8	. .	. .	17 8.34	− 0.94	−49.70	−49.75	21 16 17.75	0.00
	44	β Aquarii. . . .	F.	36.7	39.3	40.8	47.0	49.0	51.0	57.3	58.8	1.3	25 49.02	− 1.24	−49.69	−49.75	21 24 58.03	− 0.03
	45	β Cephei	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	46	ξ Aquarii. . . .	F.	. .	. .	. .	. .	. .	. .	. .	6.0	8.6	31 56.20	− 1.26	−49.72	−49.76	21 31 5.18	− 0.02
	47	XXI, 16 . . .	F.	38.1	40.8	42.5	49.4	51.4	53.8	0.3	2.0	4.9	38 51.47	− 1.45	. .	−49.76	21 38 0.26	− 2.98
	48	B. A. C. 7571 . .	F.	. .	. .		. .	. .	53.6	58.2	59.9	2.6	39 49.14	− 0.86	. .	−49.76	21 38 58.52	− 2.15

2. Bisections at set C.
11. Wire A used.
14, 30, 35. Bisections at sets B and D.
24, 25. The micrometer revolutions and wires are interchanged in the reductions.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	306 56	10 17.8	11.5	6.0	11.5	36	. .	820	. .	815	. .	84.1	53 0 48.8	. .	+ 1 18.5	104 8 28.5	+ 1.6
2	34 8	22.6	16.3	13.3	16.1	31	490	. .	. .	. .	465	84.1	325 47 32.5	. .	− 40.3	16 53 13.4	− 1.0
3	320 8	21.5	14.8	9.9	15.3	35	. .	180	. .	130	. .	84.1	39 48 27.1	. .	+ 49.4	90 55 37.7	0.0
4	327 14	16.5	11.3	6.2	10.5	36	. .	385	. .	320	. .	84.1	32 42 41.2	. .	+ 38.2	83 49 40.6	− 1.6
5	335 32	19.3	12.7	6.8	12.7	32	. .	875	. .	865	. .	84.1	24 23 49.7	. .	+ 27.0	75 30 37.9	− 0.8
6	302 24	18.8	13.0	5.0	11.0	35	. .	430	. .	415	. .	84.1	57 32 27.6	. .	+ 1 33.5	108 40 22.3	− 0.9
7	328 16	20.7	14.5	9.7	11.8	33	. .	385	. .	335	. .	84.1	31 39 58.4	. .	+ 36.8	82 46 56.4	− 0.5
8	49 40	13.5	7.5	2.3	4.0	35	050	. .	075	. .	095	84.1	310 16 17.5	. .	− 1 10.3	1 21 28.4	− 0.1
9	312 14	23.3	17.0	12.2	17.0	34	. .	270	. .	240	. .	84.1	47 42 15.2	. .	+ 1 5.5	98 49 41.9	+ 1.8
10	335 44	17.3	11.2	4.3	7.0	30	. .	130	. .	120	. .	84.1	21 11 4.7	. .	+ 26.8	75 17 52.7	0.0
11	321 54	15.8	10.6	3.5	8.3	31	. .	. .	. .	295	200	84.1	37 58 48.6	. .	+ 46.6	89 5 56.4	− 4.0
12	329 18	15.0	8.7	4.8	7.2	31	. .	460	. .	450	. .	84.1	30 37 21.0	. .	+ 35.4	81 44 20.6	− 0.6
13	323 46	18.8	14.0	8.7	11.2	34	. .	805	. .	775	. .	84.1	36 10 19.3	41.5	+ 43.8	87 17 24.3	− 0.2
14	292 13	8 28.0 12 28.5	26.0 26.8	23.2 23.1	26.8 27.1	39	055	. .	150	. .	170	83.1	67 44 37.6	. .	+ 2 19.6	118 53 18.4	. .
15	312 44	10.7	9.6	2.7	8.7	35	. .	. .	. .	726	714	83.1	47 12 27.6	. .	+ 1 2.2	98 19 51.0	+ 1.1
16	359 43	8 19.9 12 21.0	15.8 16.7	17.4 18.1	12.0 14.4	35	. .	008	. .	980	. .	83.1	0 13 25.5	. .	+ 0.2	51 19 46.9	+ 1.2
17	354 16	10 20.4	15.7	15.0	12.2	34	. .	. .	. .	605	620	83.1	5 40 18.9	. .	+ 5.7	56 46 45.8	+ 0.1
18	334 44	11.7	7.0	1.4	4.4	35	. .	672	. .	680	. .	83.1	25 12 24.9	55.2	+ 27.3	76 19 13.4	+ 1.0
19	342 14	14.0	8.3	4.2	6.2	37	. .	840	. .	834	. .	83.1	17 43 0.1	. .	+ 18.6	68 49 39.9	+ 9.4
20	11 4	12.1	6.2	4.4	5.9	34	. .	. .	. .	008	922	83.1	348 51 59.8	. .	− 11.4	39 58 9.6	+15.5
21	11 4	12.1	6.2	4.4	5.9	41	. .	. .	. .	556	564	83.1	348 53 56.9	. .	− 11.4	40 0 6.7	+15.6
22	10 2	15.2	10.3	7.2	9.1	34	. .	. .	. .	564	560	83.1	349 54 13.0	. .	− 10.4	41 0 44.6	+16.4
23	8 56	1.6	26.5	23.0	29.2	34	. .	. .	. .	878	870	83.1	351 0 4.9	. .	− 9.2	42 6 16.9	+16.0
24	11 16	17.4	14.1	11.9	11.6	33	. .	. .	. .	394	. .	83.1	348 39 30.6	. .	− 11.7	39 45 40.1	+16.8
25	11 16	17.4	14.1	11.9	11.6	31	. .	. .	. .	. .	552	83.1	348 39 58.2	. .	− 11.7	39 46 7.7	+16.8
26	296 50	1.6	26.5	23.6	29.7	38	. .	. .	. .	. .	222	83.1	63 6 55.6	. .	+ 1 54.7	114 15 11.5	− 3.3
27	49 56	1.0	25.5	19.2	23.0	30	. .	. .	. .	. .	000	83.1	309 58 47.0	. .	− 1 9.5	1 3 58.7	− 2.2
28	72 10	8.0	1.3	26.5	1.6	38	098	092	. .	. .	. .	83.1	287 46 56.6	50.1	− 3 0.4	338 50 17.4	+ 1.6
29	296 48	15.2	8.5	4.5	9.4	36	958	960	. .	. .	. .	83.1	63 8 47.1	. .	+ 1 55.2	114 17 3.5	− 1.4
30	38 22	12.2	5.3	2.9	4.2	34	. .	. .	. .	860	872	83.1	321 34 12.8	. .	− 46.5	12 39 47.5	− 2.7
31	302 26	19.6	14.2	8.0	12.2	31	. .	. .	. .	358	350	83.1	57 29 26.2	. .	+ 1 31.7	108 37 19.1	− 1.7
32	331 56	11.6	7.0	3.0	5.9	35	. .	. .	. .	132	126	83.1	28 0 17.6	. .	+ 31.2	79 7 10.0	− 3.0
33	33 8	18.4	12.4	8.5	11.0	32	250	. .	. .	. .	215	83.1	326 47 40.8	. .	− 38.4	17 53 23.6	+ 1.5
34	42 2	5.4	29.6	22.6	26.1	34	214	. .	. .	. .	035	83.1	317 53 53.4	. .	− 53.0	8 59 21.6	+20.6
35	42 2	5.4	29.6	22.6	26.1	37	. .	. .	. .	584	604	83.1	317 54 47.0	. .	− 53.0	9 0 15.2	+20.6
36	301 50	9.1	4.6	29.6	3.3	36	. .	. .	. .	700	. .	83.1	58 6 38.7	. .	+ 1 34.1	109 14 34.0	. .
37	301 50	9.1	4.6	29.6	3.3	35	. .	. .	. .	. .	640	83.1	58 6 22.4	. .	+ 1 34.1	109 14 17.7	. .
38	4 56	9 24.2	20.6	15.8	17.4	29	. .	974	. .	960	. .	83.1	354 58 41.1	. .	− 5.2	46 4 57.3	+20.0
39	4 56	24.2	20.6	15.8	17.4	30	. .	. .	. .	560	560	83.1	354 58 50.7	. .	− 5.2	46 5 6.7	+20.1
40	41 6	10 7.0	0.6	26.4	27.8	32	. .	. .	. .	030	. .	83.1	318 49 25.5	. .	− 51.7	9 54 55.0	− 1.8
41	350 46	9.2	4.8	29.1	1.5	36	. .	100	. .	110	. .	83.1	9 10 29.1	. .	+ 9.5	60 16 59.8	− 1.4
42	23 6	12.6	6.8	3.1	4.2	36	000	016	. .	. .	. .	83.1	336 50 31.1	46.0	− 25.2	27 56 27.1	− 3.8
43	340 18	13.2	8.0	2.8	4.7	29	. .	. .	. .	970	988	83.1	19 36 59.2	. .	+ 21.0	70 43 41.4	− 1.2
44	314 56	0.6	24.7	20.7	26.1	34	458	440	. .	. .	. .	83.1	44 59 55.0	. .	+ 58.9	96 7 15.1	− 1.3
45	31 2	8.4	2.2	29.0	2.0	31	. .	. .	. .	728	690	83.1	328 53 22.7	. .	− 35.6	19 59 8.3	− 1.8
46	312 38	1.2	26.4	22.5	27.0	32	. .	. .	. .	428	438	83.1	47 17 26.1	. .	+ 1 3.9	98 24 51.2	− 3.6
47	297 56	9 25.0	20.6	15.1	20.4	35	. .	460	. .	454	. .	83.1	62 0 5.5	. .	+ 1 50.6	113 8 17.3	+ 5.5
48	346 6	10 15.0	7.1	2.3	3.2	30	. .	. .	. .	198	204	83.1	13 49 2.3	. .	+ 14.5	64 55 38.0	+19.0

No.	Barom.	At. Ther.
	in.	°
13	30.28	44.0
18	30.13	56.5
28	30.12	53.5
42	30.11	50.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
14	− 51 14.4	+ 15 9.2	. .	− 36 5.2
36	− 0.8	− 8.2	. .	− 9.0
37	− 0.8	+ 8.2	. .	+ 7.4

DATE.	Number.		OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us corrections.
1874.														m. s.	s.	s.	s.	h. m. s.	s.
Oct. 16	1	β	Capricorni. . .	F.	6.8	9.4	11.0	17.2	19.2	21.5	27.8	29.3	31.9	47 19.34	− 1.33	−49.65	−49.76	21 46 28.25	− 0.08
	2	79	Draconis . . .	F.	. .	. .	54.5	1.2	8.3	15.2	22.2	. .	. .	52 8.28	+ 0.91	. .	−49.76	21 51 19.46	+ 0.34
	3	α	Aquarii. . . .	F.	0.0	2.6	4.1	10.2	12.3	14.3	20.5	22.0	24.6	0 12.29	− 1.18	−49.75	−49.76	21 59 21.35	+ 0.02
	4		B. A. C. 7708 . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	5		B. B. C. 7778 . .	F.	. .	. .	8.3	12.0	15.8	19.7	23.3	. .	. .	11 15.82	− 0.20	. .	−49.77	22 10 25.85	− 1.95
	6	π	Aquarii. . . .	F.	. .	. .	40.2	42.2	44.3	46.3	48.4	. .	. .	19 44.28	− 1.16	−49.90	−49.77	22 18 53.35	+ 0.15
	7		B. A. C. 7851 . .	F.	. .	. .	54.2	19.6	47.3	12.8	38.2	. .	. .	23 47.42	+ 6.90	. .	−49.77	22 23 4.55	− 1.44
	8		XXII, 9 . . .	F.	. .	. .	. .	34.4	37.0	39.6	44.8	46.8	50.0	32 34.24	− 1.72	. .	−49.77	22 31 42.75	− 3.72
	9	o	Cephei	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	10	γ	Cephei	F.	10.1	21.3	27.6	54.7	4.2	13.3	40.1	46.9	57.9	35 4.01	+ 1.58	. .	−49.79	23 34 15.80	+ 0.58
	11		Groombridge 4163	F.	51.9	1.2	6.6	28.0	35.7	43.0	4.7	10.7	19.0	49 35.78	+ 1.03	. .	−49.79	23 48 47.02	− 0.27
	12	α	Andromedæ . .	E.	32.4	35.2	37.0	44.0	46.3	48.6	55.0	57.5	0.4	2 46.33	− 0.75	−50.00	−49.96	0 1 55.62	+ 0.06
	13	γ	Pegasi	F.	26.1	28.7	30.3	36.6	38.7	40.8	47.1	48.6	51.3	7 38.69	− 0.91	−49.86	−49.96	0 6 47.82	− 0.10
	14	β	Ceti.	E.	57.5	0.2	1.8	8.3	10.4	12.6	19.0	20.6	23.4	38 10.42	− 1.14	−50.09	−49.97	0 37 19.31	+ 0.17
	15	ϵ	Piscium . . .	E.	6 0	8.7	10.3	16.5	18.5	20.5	26.7	28.2	30.9	57 18.48	− 0.98	−50.05	−49.98	0 56 27.52	+ 0.09
	16		Polaris	E.	. .	. .	58.0	23.5	48.0	18.5	42.0	. .	. .	13 50.00	+22.00	. .	−49.98	1 13 22.02	− 0.73
	17	θ^1	Ceti.	E.	25.4	28.2	29.7	35.8	37.9	40.0	46.2	47.7	50.4	18 37.92	− 1.14	−50.00	−49.98	1 17 46.80	+ 0.04
	18	η	Piscium . . .	E.	25.9	28.5	30.3	36.4	38.6	40.8	47.0	48.8	51.5	25 38.64	− 0.91	−49.98	−49.99	1 24 47.74	+ 0.06
	19		Parthenope . .	E.	51.5	53.8	55.5	1.6	3.7	5.8	11.8	13.4	16.0	29 3.68	− 1.05	. .	−49.99	1 29 12.64	. .
	20	β	Arietis	E.	21.9	24.0	26.4	32.8	35.0	37.2	43.7	45.2	47.0	48 34.97	− 0.85	−49.95	−49.99	1 47 44.13	− 0.02
	21	ξ^1	Ceti.	E.	1.0	3.0	5.2	11.4	13.5	15.6	21.7	23.3	25.9	7 13.47	− 0.97	−49.95	−50.00	2 6 22.50	− 0.01
17	22	α	Cephei (R.) . .	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	23	ξ	Aquarii. . . .	S.	44.2	46.9	48.4	54.5	56.6	58.6	5.0	6.5	9.0	31 56.63	− 1.22	−50.20	. .		. .
	24	ϵ	Pegasi	S.	41.1	43.7	45.2	51.3	53.4	55.5	1.8	3.3	5.9	38 53.47	− 1.00	−50.20	. .		. .
	25	79	Draconis (R) . .	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	26	32	Ursæ Majoris, S. P.	S.	9.5	5.7	55.6	50.8	45.9	40.7	35.8	26.1	22.4	9 45.83	− 2.12	. .	−50.24	10 8 53.47	− 0.18
	27		Groom. 1620, S. P.	S.	17.0	45.1	30.4	13.3	. .	. .	. .	. .	. .	11 58.15	− 6.33	. .	−50.24	10 11 1.57	− 3.40
	28		B. A. C. 7851 . .	S.	. .	. .	. .	. .	. .	39.0	31.0	30.3	23.0	23 47.45	+ 4.80	. .	−50.24	22 23 2.10	− 1.22
18	29	δ	Aquilæ.	Sk.	49.6	52.2	53.7	59.8	1.9	3.9	10.0	11.5	14.1	20 1.86	− 1.10	−50.28	−50.29	19 19 10.41	+ 0.04
	30		B. A. C. 6717 . .	Sk.	. .	. .	58.9	1.9	5.1	8.2	11.2	. .	. .	31 5.06	− 0.60	. .	−50.29	19 30 14.17	− 0.62
	31		B. A. C. 6731 . .	Sk.	. .	. .	30.0	32.8	35.6	38.5	41.4	. .	. .	33 35.66	− 0.68	. .	−50.29	19 32 44.69	− 0.82
	32	γ	Aquilæ.	Sk.	. .	. .	5.1	7.2	9.2	11.4	13.4	. .	. .	41 9.26	− 1.10	−50.30	−50.29	19 40 17.87	+ 0.04
	33	α	Aquilæ.	Sk.	. .	. .	27.1	29.3	31.4	33.4	35.5	. .	. .	45 31.34	− 1.11	−50.32	−50.29	19 44 39.94	+ 0.07
	34	λ	Ursæ Minoris. .	Sk.	. .	. .	. .	1.0	19.5	43.5	30.0	. .	. .	49 50.90	+25.25	. .	−50.30	19 49 25.85	− 0.33
	35		B. A. C. 6973 . .	Sk.	. .	. .	21.0	23.2	25.6	27.8	30.3	. .	. .	11 25.58	− 0.92	. .	−50.30	20 10 34.36	− 1.50
	36		Moon I, S. . .	Sk.	19.6	22.7	24.3	31.3	33.5	35.9	42.9	44.7	47.6	15 33.61	− 1.47	. .	−50.30	20 14 41.84	+71.70
	37	α	Cygni	Sk.	. .	. .	54.0	57.0	0.4	3.4	6.3	. .	. .	38 0.46	− 0.67	−50.30	−50.30	20 37 9.46	+ 0.02
	38		Saturn I. N. . .	Sk.	3.2	5.8	7.0	. .	. .	. .	24.7	26.5	29.3	42 16.18	− 1.39	. .	−50.31	20 41 24.48	. .
	39		Saturn II, S. . .	Sk.	. .	. .	14.7	16.9	19.0	21.2	23.3	. .	. .	42 19.02	− 1.30	. .	−50.31	20 41 27.32	. .
	40		B. A. C. 7253 . .	Sk.	22.8	26.4	28.4	37.0	39.8	42.7	51.0	53.3	56.9	49 39.81	− 0.69	. .	−50.31	20 48 48.81	− 1.41
	41	ζ	Cygni	Sk.	13.4	16.3	18.0	25.2	27.5	29.0	36.9	38.7	41.6	8 27.50	− 0.80	−50.33	−50.31	21 7 36.30	+ 0.03
	42	β	Aquarii	Sk.	37.3	39.9	41.5	47.6	49.0	51.7	57.9	59.3	1.8	25 49.62	− 1.25	−50.30	−50.31	21 24 58.06	+ 0.02
	43		XXI, 11 . . .	Sk.	. .	. .	34.8	37.3	39.0	41.8	43.0	. .	. .	32 39.48	− 1.45	. .	−50.32	21 31 47.71	− 2.97
	44		XXI, 14 . . .	Sk.	. .	. .	30.8	33.1	35.4	37.6	39.9	. .	. .	33 35.36	− 1.46	. .	−50.32	21 32 43.58	− 2.99
	45	α	Ursæ Majoris . .	E.	21.7	27.2	30.8	13.0	48.4	52.8	6.0	9.3	15.0	56 48.37	− 0.17	. .	−50.69	10 55 57.51	+ 0.01
	46	δ	Leonis	E.	4.0	6.7	8.2	15.0	17.1	19.2	25.0	27.5	30.4	8 17.13	− 0.95	−50.69	−50.69	11 7 25.50	+ 0.04
	47	δ	Crateris . . .	E.	42.8	45.4	46.8	53.3	55.3	57.4	3.9	5.4	8.0	13 55.37	− 1.29	−50.81	−50.69	11 13 3.30	+ 0.10
	48	β	Leonis	E.	17.0	20.6	22.1	28.5	30.6	32.7	39.0	40.7	43.4	43 30.61	− 1.01	−50.75	−50.70	11 42 38.90	+ 0.03
	49	γ	Ursæ Majoris. .	E.	42.8	47.0	49.0	0.2	3.7	7.4	17.8	20.4	24.8	48 3.78	− 0.43	. .	−50.70	11 47 12.65	+ 0.06
	50	12	Canum Venat. .	E.	44.3	47.5	49.5	57.4	0.0	2.6	10.6	12.6	15.8	51 0.03	− 0.73	−50.80	−50.72	12 50 8.58	+ 0.08

2, 5, 7, 10, 26, 36. Bisections at sets B and D.
2, 19. Wire A used.
11, 40. Telescope micrometer reading decreased five revolutions in reduction.
22. Bisections at wires B_1, C_1, C_5, and D_3.
27. Bisections at wires B_1 and C_1.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	306 56	9 23.5	17.7	12.2	16.8	38	. .	376	. .	328	. .	83.1	53 0 47.1	. .	+ 1 18.3	104 8 26.6	− 0.3
2	34 8	10 21.8	14 1	11.0	12.3	41	. .	. .	. .	544	564	83.1	325 47 30.6	. .	− 40.1	16 53 11.7	− 2.5
3	320 8	8.8	1.5	25.8	0.8	36	066	046	. .	. .	. .	83.1	39 48 25.8	. .	+ 49.2	90 55 36.2	− 1.5
4	22 42	9.5	3.3	29.5	1.7	32	. .	. .	. .	636	646	83.1	337 13 37.0	. .	− 24.8	28 19 33.4	+23.9
5	17 20	19.4	13.2	10.4	11.5	35	. .	. .	. .	900	896	83.1	342 28 35.9	. .	− 18.7	33 34 38.4	+23.9
6	321 48	7.2	2.4	26.8	0.8	35	376	370	. .	. .	. .	83.1	38 8 15.5	. .	+ 46.4	89 15 23.1	− 1.7
7	46 30	7.1	1.4	27.9	0.7	34	. .	036	. .	038	. .	83.1	313 25 55.8	44.2	− 1 2.4	4 31 14.6	+22.9
8	281 20	9 27.3	22.2	19.3	22.0	40	. .	. .	. .	012	136	83.1	78 37 18.6	. .	+ 4 46.2	129 48 26.0	+ 5.1
9	23 28	10 15.5	9.8	4.4	5.8	35	. .	462	. .	490	. .	83.1	331 28 25.3	. .	− 32.2	22 34 14.3	− 2.7
10	37 58	7.6	29.8	26.0	29.0	35	. .	456	. .	464	. .	83.1	321 58 16.1	43.1	− 46.4	13 3 50.9	− 1.6
11	31 44	17.2	10.3	5.8	6.9	36	. .	395	. .	. .	. .	83.1	325 11 24.0	. .	− 41.7	16 17 3.5	− 1.4
12	349 26	23.5	18.8	12.3	12.7	30	. .	850	. .	810	. .	83.1	10 29 21.5	. .	+ 11.0	61 35 53.7	− 1.7
13	335 32	10.8	4.3	29.4	3.5	33	. .	510	. .	512	. .	83.1	24 23 50.1	42.8	+ 26.9	75 30 38.2	− 0.4
14	302 24	18.7	13.3	10.0	12.5	35	. .	515	. .	440	. .	83.1	57 32 29.2	. .	+ 1 33.1	108 40 23.5	+ 0.2
15	328 16	23.8	17.8	13.5	16.1	33	. .	115	. .	080	. .	83.1	31 39 57.0	. .	+ 36.6	82 46 54.8	− 2.1
16	49 40	13.9	7.0	3.3	4.0	35	000	. .	035	. .	040	83.1	310 16 15.8	. .	− 1 10.0	1 21 27.0	− 1.1
17	312 14	15.5	9.3	4.6	8.1	34	. .	755	. .	705	. .	83.1	47 42 13.5	. .	+ 1 5.2	98 49 38.9	− 1.3
18	335 14	15.2	8.0	3.5	6.0	30	. .	165	. .	145	. .	83.1	24 11 2.4	. .	+ 26.7	75 17 50.3	− 2.3
19	321 48	20.0	15.9	10.0	13.1	29	. .	450	. .	365	. .	83.1	38 4 24.4	. .	+ 46.5	89 11 32.1	− 4.1
20	341 14	12.5	6.8	0.7	3.5	31	. .	965	. .	865	. .	83.1	18 41 27.1	. .	+ 20.1	69 48 8.4	− 1.6
21	329 18	17.7	12.0	7.0	9.5	31	. .	290	. .	280	. .	83.1	30 37 23.0	. .	+ 35.2	81 44 19.4	− 1.8
22	156 46	0.2	. .	4.9	. .	31	295	269	. .	293	265	83.0	203 9 14.0	. .	+ 24.5	27 56 42.7	+ 2.0
23	312 38	10.0	5.2	28.5	4.7	32	. .	170	. .	240	. .	83.0	47 17 30.0	. .	+ 1 1.9	98 24 53.1	− 1.7
24	330 20	8.8	5.9	29.8	5.9	29	. .	. .	. .	840	874	83.0	29 34 55.0	55.8	+ 32.5	80 41 48.7	− 1.4
25	145 44	9 25.2	12.3	1.5	14.7	35	560	560	. .	532	544	83.0	214 12 28.3	. .	+ 38.9	16 53 14.0	0.0
26	75 14	23.4	19.1	10.3	17.1	29	. .	575	. .	675	. .	83.0	284 41 3.2	. .	− 3 34.4	335 43 50.0	+ 0.3
27	56 8	10 12.7	5.4	5.3	9.5	34	329	287	. .	. .	. .	83.0	303 48 5.3	56.5	− 1 25.1	354 53 1.4	+21.8
28	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
29	323 56	1.5	27.5	22.5	26.5	38	450	395	. .	. .	. .	82.9	36 0 57.2	58.1	+ 41.4	87 7 59.8	+ 0.5
30	10 2	4.7	0.8	24.0	27.8	35	250	320	. .	. .	. .	82.9	349 54 12.0	. .	− 10.2	41 0 23.0	+16.1
31	5 28	10.8	4.5	29.3	0.5	35	922	947	. .	. .	. .	82.9	354 28 26.3	. .	− 5.5	45 34 42.0	+15.7
32	331 22	5.2	0.4	25.0	0.5	36	472	460	. .	. .	. .	82.9	28 34 30.6	. .	+ 31.1	79 41 22.9	− 0.3
33	329 36	9.8	5.5	28.6	3.5	37	005	979	. .	. .	. .	82.9	30 20 42.7	. .	+ 33.5	81 27 37.4	− 0.1
34	49 56	4.3	28.5	20.5	25.8	29	. .	810	820	819	840	82.9	309 58 46.5	. .	− 1 8.1	1 5 59.6	− 1.2
35	318 28	4.2	29.0	19.5	26.7	32	455	455	. .	. .	. .	82.9	11 27 26.4	. .	+ 11.6	62 33 59.2	+14.8
36	294 44	2.8	28.3	21.0	25.4	34	245	. .	043	. .	950	82.9	65 11 50.8	. .	+ 2 3.4	116 20 15.4	. .
37	5 52	0.1	25.2	19.5	22.0	33	035	035	. .	. .	. .	82.9	354 3 32.4	. .	− 6.0	45 9 47.6	− 1.2
38	301 50	9 26.8	21.8	14.0	20.0	35	465	470	. .	. .	. .	82.9	58 6 10.0	. .	+ 1 32.2	109 14 3.4	. .
39	301 50	26.8	21.8	14.0	20.0	36	. .	. .	. .	530	568	82.9	58 6 22.6	. .	+ 1 32.2	109 14 16.0	. .
40	4 56	10 11.7	6.4	29.2	2.4	34	. .	070	. .	035	. .	82.9	354 58 42.3	. .	− 5.1	46 4 58.4	+20.2
41	350 46	1.5	26.9	21.1	25.1	36	. .	750	. .	. .	. .	82.9	9 10 30.9	. .	+ 9.3	60 17 1.4	+ 0.4
42	314 56	14.7	8.8	2.5	5.9	33	. .	810	. .	776	. .	82.9	44 59 57.6	. .	+ 57.8	96 7 16.6	+ 0.2
43	296 4	13.2	6.1	28.3	4.7	36	025	033	. .	. .	. .	82.9	63 52 28.8	. .	+ 1 57.5	115 0 47.5	+ 4.2
44	295 18	22.1	15.0	6.5	12.3	37	. .	. .	. .	108	128	82.9	64 38 54.6	50.5	+ 2 1.6	115 47 17.4	+ 4.1
45	23 28	16.0	12.5	9.1	9.7	35	. .	690	. .	670	. .	81.4	336 28 29.4	48.0	− 25.5	27 34 25.1	− 3.1
46	342 16	15.5	11.8	6.3	9.2	36	. .	145	. .	140	. .	81.4	17 40 34.9	. .	+ 18.7	68 47 14.8	− 3.2
47	306 58	15.5	13.7	7.9	11.2	34	. .	220	. .	120	. .	81.4	52 58 5.9	. .	+ 1 17.4	104 5 44.5	− 4.2
48	330 20	11.5	8.3	2.5	5.2	36	. .	910	. .	885	. .	81.4	23 36 42.6	. .	+ 25.5	74 43 29.3	− 2.4
49	15 26	14.5	11.5	8.0	7.0	35	. .	540	. .	530	. .	81.4	344 30 25.5	. .	− 16.2	35 36 30.5	− 2.4
50	0 2	12.7	9.3	4.8	5.7	33	. .	540	. .	470	. .	81.4	359 53 54.6	. .	− 0.1	51 0 15.7	+ 1.9

No.	Barom.	At. Ther.
	in.	°
7	30.11	48.0
10	30.10	47.0
13	30.10	46.0
20	29.80	59.0
24	29.81	58.0
44	29.86	53.4
45	30.05	46.5

For summary of the elements of reduction see page 3.

No.	Parallax	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	° ′ ″
36	−51 41.1	− 15 35.0	. .	−1 7 16.1
38	− 0.8	+ 6.3	. .	+ 5.5
39	− 0.8	− 6.3	. .	− 7.1

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Oct. 18	1	Polaris, S.P.	E.	..	..	32.0	5.0	39.0	13.0	47.0	..	..	14 39.20	−22.13	..	−50.72	1 13 27.35	+ 4.79
19	2	Sun I, N.	E.	32.6	35.3	36.9	42.9	45.0	47.0	53.3	54.0	57.5	36 45.04	− 1.25	..	−50.73	13 35 53.06	..
	3	Sun II, S.	E.	43.6	46.2	47.9	54.3	56.2	58.4	4.4	6.0	8.3	38 56.19	− 1.25	..	−50.73	13 38 4.21	..
	4	ε Bootis	E.	7.3	10.1	11.8	18.7	21.0	23.4	30.4	32.0	35.2	40 21.10	− 0.88	−50.68	−50.74	14 39 29.48	− 0.08
	5	α^2 Libræ	E.	34.7	37.2	39.0	45.3	47.5	49.5	55.9	57.5	0.1	44 47.41	− 1.30	−50.83	−50.74	14 43 55.37	+ 0.08
	6	β Ursæ Minoris	E.	..	..	36.9	44.4	52.5	0.0	7.9	..	..	51 52.34	+ 0.70	..	−50.74	14 51 2.30	− 0.05
	7	β Bootis	E.	47.3	50.6	52.9	0.9	3.5	6.3	14.5	16.4	19.8	58 3.58	− 0.70	..	−50.74	14 57 12.14	0.00
	8	Mercury I, C.	E.	5.4	8.0	9.7	16.2	18.4	20.6	27.2	28.9	31.5	7 18.43	− 1.36	..	−50.75	15 6 26.32	+ 0.21
	9	μ^1 Bootis	E.	19.8	23.1	25.1	32.8	35.4	38.1	45.8	47.8	51.0	20 35.43	− 0.75	−50.59	−50.75	15 19 43.93	− 0.17
	10	α Serpentis	E.	44.0	46.6	48.0	54.3	56.4	58.5	4.5	6.0	8.0	38 56.32	− 1.04	−50.73	−50.75	15 38 4.48	0.00
	11	ε Serpentis	E.	12.4	15.0	16.6	22.7	24.9	26.8	33.0	34.5	37.0	45 24.77	− 1.11	−50.70	−50.75	15 44 32.80	− 0.07
	12	τ Herculis	E.	30.6	34.4	36.7	45.5	48.6	51.5	0.4	2.5	6..	16 48.51	− 0.60	..	−50.76	16 15 57.15	+ 0.15
	13	α Scorpii	E.	20.6	23.5	25.3	32.1	34.4	36.6	43.4	45.1	48.0	22 34.33	− 1.42	−50.78	−50.76	16 21 42.15	+ 0.01
	14	ζ Ophiuchi	E.	53.9	56.5	58.3	4.3	6.4	8.4	14.6	16.3	19.0	31 6.41	− 1.25	−50.81	−50.76	16 30 14.43	+ 0.05
	15	Venus I, N.	E.	58.5	1.2	7.5	9.8	12.1	14.8	16.8	22.8	25.0	35 12.12	− 1.43	..	−50.76	16 34 19.93	+ 1.25
	16	Venus S.	E.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	17	η Herculis	E.	..	..	20.9	23.6	26.3	29.0	31.6	..	..	39 26.28	− 0.73	−50.71	−50.77	16 38 34.78	− 0.05
	18	κ Ophiuchi	E.	25.0	26.7	30.8	32.9	35.0	37.0	39.1	43.3	44.8	52 34.96	− 1.07	−50.72	−50.77	16 51 43.12	− 0.01
	19	α Cygni	E.	43.4	46.9	49.3	47.9	0.9	3.9	12.4	14.6	18.1	38 0.82	− 0.55	−50.80	−50.81	20 37 9.40	+ 0.01
	20	Saturn I, N.	E.	7.0	10.0	11.6	..	..	..	29.0	30.5	33.2	42 20.22	− 1.29	..	−50.81	20 41 28.12	..
	21	Saturn II, S.	E.	..	..	17.4	19.5	21.7	23.8	26.0	..	..	42 21.68	− 1.26	..	−50.81	20 41 29.58	..
	22	XX, 16	E.	42.5	45.4	47.0	54.0	56.4	58.8	5.7	7.4	10.4	44 56.40	− 1.41	..	−50.81	20 41 4.18	− 2.79
	23	B. A. C. 7257	E.	19.0	21.9	23.4	29.7	31.7	34.0	40.2	41.7	44.4	50 31.78	− 0.98	..	−50.82	20 49 39.98	− 2.03
	24	ν Cygni	E.	5.4	8.7	10.9	19.0	21.7	24.3	32.4	34.4	37.7	53 21.61	− 0.62	−50.89	−50.82	20 52 30.17	+ 0.13
	25	61^1 Cygni	E.	52.7	56.1	58.2	5.9	8.5	11.0	18.9	20.9	23.9	2 8.46	− 0.67	−50.88	−50.82	21 1 16.97	+ 0.02
	26	61^2 Cygni	E.	54.4	57.6	59.7	7.5	10.0	12.6	20.3	22.2	25.7	2 10.00	− 0.67	..	−50.82	21 2 18.51	+ 1.56
	27	ζ Cygni	E.	13.7	16.6	18.5	25.5	27.9	30.3	37.4	39.0	41.9	8 27.87	− 0.79	−50.82	−50.82	21 7 36.26	+ 0.01
	28	Moon I, S.	E.	11.9	14.9	16.6	23.4	25.6	28.0	34.7	36.4	39.0	13 25.61	− 1.34	..	−50.82	21 12 33.45	+70.73
	29	β Aquarii	E.	37.8	40.3	41.9	48.0	50.0	52.1	58.3	59.9	2.3	25 50.07	− 1.16	−50.86	−50.82	21 24 58.09	+ 0.07
	30	XXI, 13	E.	31.7	33.1	37.5	39.6	41.8	44.0	46.4	50.7	52.1	32 41.88	− 1.31	..	−50.82	21 31 49.75	− 2.84
	31	ε Pegasi	E.	41.5	44.1	45.8	52.0	54.0	56.1	2.3	3.9	6.4	38 54.01	− 1.01	−50.78	−50.83	21 38 2.17	− 0.04
	32	XXI, 17	E.	..	..	11.0	13.4	15.9	18.2	20.6	..	..	41 15.82	− 1.45	..	−50.83	21 40 23.54	− 3.17
	33	XXI, 18	E.	40.4	42.1	46.7	49.0	51.3	53.5	55.8	0.5	2.3	41 51.29	− 1.39	..	−50.83	21 40 59.07	− 3.04
	34	μ Capricorni	E.	..	..	16.1	18.3	20.4	22.5	24.6	..	..	47 20.38	− 1.25	−50.80	−50.83	21 46 28.30	0.00
	35	α Aquarii	E.	1.0	3.5	5.2	11.2	13.3	15.4	21.5	23.0	25.5	0 13.29	− 1.11	−50.85	−50.83	21 59 21.35	+ 0.05
	36	B. A. C. 7708	E.	..	..	59.8	4.5	8.6	12.8	17.6	..	..	2 8.66	− 0.08	..	−50.83	22 1 17.75	− 1.65
	37	B. A. C. 7736^1	E.	49.0	54.0	57.1	8.8	12.6	16.6	28.4	31.4	36.4	5 12.70	− 0.20	..	−50.83	22 4 21.67	− 1.76
	38	B. A. C. 7736^2	E.	51.0	56.1	59.1	10.7	14.6	18.7	30.4	33.4	38.3	5 14.70	− 0.20	..	−50.83	22 4 23.67	− 1.76
	39	B. A. C. 7778	E.	54.9	59.5	2.3	13.3	17.0	20.8	31.7	34.6	39.4	11 17.06	− 0.27	..	−50.83	22 10 25.96	− 1.87
	40	XXII, 10	E.	25.0	28.2	30.0	37.3	39.7	42.3	49.5	51.4	54.5	32 39.77	− 1.48	..	−50.84	22 31 47.45	− 3.46
	41	ζ Pegasi	E.	52.6	55.3	56.9	3.0	5.0	7.1	13.4	14.9	17.5	36 5.08	− 1.00	−50.76	−50.84	22 35 13.24	0.00
	42	B. A. C. 7943	E.	5.9	8.4	10.0	16.3	18.4	20.4	26.6	28.3	30.9	41 18.36	− 0.99	..	−50.84	22 40 26.53	− 2.62
	43	λ Aquarii	E.	45.0	47.6	49.1	55.4	57.4	59.5	5.6	7.0	9.8	46 57.38	− 1.19	−50.85	−50.84	22 46 5.35	+ 0.09
	44	α Piscis Australis	E.	22.7	25.5	27.4	34.5	36.8	39.4	46.3	48.0	51.1	51 36.86	− 1.44	−50.90	−50.84	22 50 44.58	+ 0.10
	45	α Pegasi	E.	11.0	13.6	15.2	21.5	23.6	25.7	32.0	33.6	36.3	59 23.61	− 0.96	−50.82	−50.84	22 58 31.81	+ 0.01
	46	ε Piscium	E.	7.0	9.6	11.0	17.3	19.3	21.3	27.6	29.2	31.7	57 19.33	− 1.03	−50.84	−50.87	0 56 27.43	− 0.01
	47	Polaris	E.	..	..	6.0	26.0	56.0	25.0	45.0	..	..	13 55.60	+21.84	..	−50.87	1 13 26.57	+ 4.07
	48	θ^1 Ceti	E.	26.4	29.0	30.5	36.7	38.8	40.9	47.0	48.7	51.2	18 38.80	− 1.19	−50.81	−50.87	1 17 46.74	− 0.04
	49	η Piscium	E.	26.9	29.6	31.4	35.5	37.5	39.7	41.9	44.0	..	25 39.70	− 0.95	−50.95	−50.87	1 24 47.88	+ 0.18
	50	Parthenope	E.	13.8	15.4	19.3	21.3	23.3	25.3	27.5	31.5	33.2	26 23.40	− 1.10	..	−50.87	1 25 31.43	..

6. Bisections at set C.
17. Bisections at wires V and VI.
28, 36. Bisections at sets B and D.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	52 22	10 8.1	3.7	0.3	2.0	32	040	. .	015	. .	980	81.4	307 33 24.1	. .	− 1 15.1	358 38 30.2	− 2.8
2	311 14	21.8	25.1	16.7	26.0	36	855	765	. .	. .	. .	81.4	48 42 56.7	56.0	+ 1 5.5	99 50 23.4	. .
3	310 42	15.4	10.8	3.6	12.7	37	. .	. .	. .	380	395	81.4	49 14 53.6	. .	+ 1 6.8	100 22 21.6	. .
4	348 38	18.2	12.8	6.5	9.4	30	. .	400	. .	380	. .	81.4	11 17 7.9	. .	+ 11.5	62 23 40.6	− 2.2
5	305 32	9.2	4.5	29.3	4.6	32	. .	190	. .	160	. .	81.4	54 23 27.6	. .	+ 1 20.1	105 31 8.9	+ 0.4
6	35 42	12.5	7.0	0.3	3.2	34	975	. .	. .	. .	920	81.4	324 14 11.6	. .	− 41.4	15 19 51.4	− 5.0
7	1 56	14.7	11.8	4.2	8.5	35	. .	580	. .	540	. .	81.4	358 0 25.2	. .	+ 2.0	49 6 44.4	− 2.6
8	300 50	8.6	5.4	29.2	3.8	34	. .	645	. .	635	. .	81.4	59 6 5.2	. .	+ 1 35.7	110 14 2.1	. .
9	358 52	8.5	5.7	1.9	2.8	36	. .	040	. .	025	. .	81.4	1 4 27.4	. .	+ 1.1	52 10 49.7	− 1.6
10	327 52	11.0	7.8	3.5	8.0	32	. .	935	. .	900	. .	81.4	32 3 42.3	. .	+ 35.9	83 10 39.4	− 0.8
11	325 54	10.8	7.3	2.1	5.3	32	. .	480	. .	420	. .	81.4	34 1 34.0	. .	+ 38.7	85 8 33.9	− 0.7
12	7 40	7.0	4.5	0.0	1.3	37	. .	750	. .	745	. .	81.4	352 16 52.2	. .	− 7.8	43 23 5.6	− 2.6
13	291 56	14.6	11.5	7.3	10.0	36	. .	882	. .	850	. .	81.4	65 0 45.9	. .	+ 2 2.1	116 9 9.2	− 2.5
14	310 44	11.4	9.5	3.9	7.3	31	. .	115	. .	085	. .	81.4	49 11 14.8	. .	+ 1 6.1	100 18 42.1	+ 0.2
15	294 20	5.3	2.9	0.9	2.1	34	410	. .	. .	. .	230	81.4	65 35 58.6	. .	+ 2 5.3	116 44 25.1	. .
16	294 20	5.3	2.9	0.9	2.1	36	. .	630	. .	590	. .	81.4	65 36 33.9	. .	+ 2 5.4	116 45 0.5	. .
17	0 12	11.5	9.5	4.2	4.8	33	. .	. .	380	365	. .	81.4	359 43 49.5	. .	− 0.3	50 50 10.4	0.0
18	330 38	16.7	14.1	9.0	12.2	36	. .	720	. .	690	. .	81.4	29 18 45.8	60.5	+ 32.1	80 25 39.1	− 0.6
19	5 52	13.5	9.6	3.0	4.0	32	. .	205	. .	150	. .	83.4	354 3 33.3	. .	− 6.1	45 9 48.4	− 0.4
20	301 50	11.2	6.3	0.0	5.6	33	410	. .	. .	. .	400	83.4	58 5 49.7	. .	+ 1 34.3	109 13 45.2	. .
21	301 50	11.2	6.3	0.0	5.6	34	. .	525	. .	500	. .	83.4	58 6 6.8	. .	+ 1 34.3	109 14 2.3	. .
22	292 36	13.5	12.8	7.8	13.3	30	. .	420	. .	390	. .	83.4	67 19 0.3	. .	+ 2 20.0	118 27 50.5	− 0.6
23	333 8	22.3	17.0	12.0	16.5	31	. .	930	. .	915	. .	83.4	26 47 38.5	. .	+ 29.8	77 54 29.5	+13.2
24	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
25	359 10	13.3	9.5	2.3	4.5	31	680	. .	. .	. .	550	83.4	0 45 24.8	46.0	+ 0.8	51 51 46.8	+ 1.2
26	359 10	13.3	9.5	2.3	4.5	32	. .	165	. .	100	. .	83.4	0 45 32.4	. .	+ 0.8	51 51 54.4	+ 8.8
27	350 46	18.5	13.8	6.8	8.5	35	. .	665	. .	635	. .	83.4	9 10 30.7	. .	+ 9 5	60 17 1.4	+ 0.4
28	298 38	19.8	14.3	9.0	12.8	39	. .	130	785	635	. .	83.4	61 19 36.8	. .	+ 1 47.4	112 27 45.4	. .
29	314 56	19.7	14.6	7.7	11.8	33	. .	270	. .	260	. .	83.4	44 59 55.5	. .	+ 58.9	96 7 15.6	− 0.9
30	300 54	15.8	11.1	4.8	9.3	39	. .	125	. .	120	. .	83.4	53 3 21.9	. .	+ 1 38.1	110 11 21.2	+ 5.7
31	330 20	9.0	4.0	27.5	1.9	29	940	940	. .	. .	. .	83.4	29 34 54.0	. .	+ 33.5	80 41 48.7	− 1.4
32	289 36	19.4	14.5	7.0	11.0	32	135	135	. .	. .	. .	83.4	70 19 37.0	. .	+ 2 43.5	121 28 41.7	+ 2.7
33	294 38	23.8	18.3	12.7	16.8	37	. .	. .	. .	260	280	83.4	65 19 1.4	. .	+ 2 7.6	116 27 30.2	+ 4.4
34	306 56	17.2	12.0	6.0	11.5	36	. .	. .	. .	870	860	83.4	53 0 49.1	. .	+ 1 18.2	104 8 28.5	+ 1.4
35	320 8	21.2	15.5	9.6	13.5	35	. .	160	. .	170	. .	83.4	39 48 26.1	. .	+ 49.2	90 55 36.5	− 1.2
36	22 42	13.0	7.8	2.3	3.3	32	440	. .	. .	. .	430	83.4	337 13 36.1	. .	− 24.8	28 19 32.5	+24.5
37	19 42	14.8	10.2	6.5	6.0	29	955	. .	. .	. .	915	83.4	340 13 1.7	. .	− 21.2	34 19 1.7	+24.5
38	19 42	14.8	10.2	6.5	6.0	30	. .	960	. .	950	. .	83.4	340 13 16.6	. .	− 21.2	31 19 16.6	+24.5
39	17 28	20.7	16.0	9.8	12.0	35	. .	855	. .	835	. .	83.4	342 28 36.7	. .	− 18.6	33 34 39.3	+24.5
40	287 22	15.2	9.2	4.5	8.6	36	. .	145	. .	035	. .	83.4	72 34 34.5	. .	+ 3 6.1	123 44 1.8	+ 6.3
41	331 14	16.1	9.0	3.3	8.7	35	. .	095	. .	090	. .	83.4	28 42 19.4	. .	+ 32.4	79 49 13.0	− 0.3
42	332 34	13.3	7.4	0.0	5.3	30	. .	775	. .	760	. .	83.4	27 21 10.4	. .	+ 30.6	78 28 2.2	+19.0
43	312 48	20.2	14.3	7.5	12.7	30	. .	805	. .	775	. .	83.4	47 7 17.8	. .	+ 1 3.6	98 14 42.6	− 0.1
44	290 48	26.6	19.8	13.8	21.3	34	. .	285	. .	195	. .	83.4	69 8 17.2	. .	+ 2 33.9	120 17 12.3	− 0.2
45	335 34	16.0	10.6	4.4	8.5	30	. .	. .	. .	580	575	83.4	24 21 11.3	45.0	+ 26.8	75 27 59.3	+ 0.5
46	328 16	21.2	16.0	9.2	12.3	33	. .	295	. .	205	. .	83.4	31 39 56.5	. .	+ 36.8	82 46 54.5	− 2.3
47	49 40	14.2	8.2	4.8	4.8	34	960	. .	. .	. .	960	83.4	310 16 16.4	. .	− 1 10.4	1 21 27.2	+ 0.4
48	312 14	16.0	9.5	2.8	8.0	34	. .	770	. .	730	. .	83.4	47 42 13.8	. .	+ 1 5.6	98 49 40.6	+ 0.2
49	335 44	13.3	6.5	1.3	4.0	30	410	350	. .	. .	. .	83.4	24 11 3.9	. .	+ 26.8	75 17 51.9	− 0.5
50	321 34	13.5	7.0	2.3	6.0	27	. .	. .	. .	440	430	83.4	38 20 20.4	. .	+ 47.3	89 27 28.9	− 4.1

No.	Barom.	At. Ther.
	in.	°
2	30.05	53.0
18	30.04	57.5
25	30.09	50.0
45	30.13	47.5

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	° ′ ″
2	− 6.7	+ 15 59.1	. .	+ 15 52.4
3	− 6.7	− 15 59.1	. .	− 16 5.8
8	− 7.0	. .	+ 0.3	− 6.7
15	− 15.2	+ 17.9	. .	+ 2.7
16	− 15.2	− 17.9	+ 0.4	− 32.7
20	− 0.8	+ 8.6	. .	+ 7.8
21	− 0.8	− 8.6	. .	− 9.4
28	−50 46.5	− 15 50.5	. .	−1 6 37.0

DATE.	Number.		OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted	Apparent Right Ascension.	Miscellan'us Corrections.
1874.														m. s.	s.	s.	s.	h. m. s.	s.
Oct. 19	1	o	Piscium . . .	E.	27.0	29.7	31.3	37.5	39.5	41.7	47.8	49.4	51.9	39 39.53	− 1.02	−50.78	−50.88	1 38 47.63	− 0.13
	2	β	Arietis	E.	22.9	25.7	27.3	33.7	36.0	38.1	44.6	46.2	49.0	48 35.94	− 0.90	−50.84	−50.88	1 47 44.16	− 0.02
	3		Neptune . . .	E.	53.5	56.0	57.6	3.7	5.9	8.0	14.0	15.7	18.3	53 5.86	− 1.01	. .	−50.88	1 52 13.97	. .
	4		I, 9[1]	E.	49.2	52.2	53.8	. .	. .	. .	11.7	13.5	16.2	54 2.77	− 1.35	. .	−50.88	1 53 10.54	− 3.36
	5		I, 9[2]	E.	. .	. .	58.7	1.0	3.3	5.6	7.8	. .	. .	54 3.28	− 1.35	. .	−50.88	1 53 11.05	− 3.36
	6	α	Arietis	E.	48.9	50.6	55.0	57.2	59.5	1.7	3.9	8.3	10.0	0 59.46	− 0.87	−50.87	−50.88	2 0 7.71	0.00
	7	δ	Leonis	F.	4.2	7.0	8.6	15.0	17.3	19.5	26.0	27.6	30.5	8 17.30	− 0.84	−50.94	−50.86	11 7 25.60	+ 0.02
	8	β	Leonis	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	9	γ	Ursæ Majoris . .	F.	42.9	47.4	50.0	0.3	3.9	7.4	17.9	20.5	25.0	48 3.92	− 0.25	. .	−50.87	11 47 12.80	+ 0.19
	10		Polaris, S. P. .	F.	. .	. .	30.0	3.0	36.0	12.0	15.0	. .	. .	14 37.20	−24.93	. .	−50.89	1 13 21.38	− 1.05
20	11		Sun I, N. . . .	F.	19.0	21.0	23.1	29.3	31.4	33.5	39.8	41.4	44.0	40 31.46	− 1.20	. .	−50.90	13 39 39.36	. .
	12		Sun II, S. . . .	F.	30.4	32.9	34.4	40.7	42.7	44.8	51.2	52.6	55.2	42 42.77	− 1.20	. .	−50.90	13 41 50.67	. .
	13	β	Ursæ Minoris. .	F.	. .	. .	37.2	44.8	52.3	59.9	7.8	. .	. .	51 52.40	+ 1.05	. .	−50.92	14 51 2.53	+ 0.21
	14		Venus I, N. . .	F.	23.0	27.0	32.3	34.0	36.8	39.0	41.4	45.9	50.5	38 36.79	− 1.40	. .	−50.95	16 37 44.44	+ 1.27
	15		Venus S. . . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	16	α	Ophiuchi . . .	F.	45.4	48.2	49.8	56.0	58.0	0.1	6.5	8.0	10.7	29 58.08	− 0.95	−50.98	−50.96	17 29 6.17	+ 0.05
	17	μ	Herculis . . .	F.	10.3	13.2	14.8	21.8	24.0	26.4	33.4	35.0	37.9	42 24.09	− 0.76	−50.97	−50.97	17 41 32.36	0.00
	18	λ	Ursæ Minoris. .	F.	. .	. .	. .	. .	. .	25.0	6.0	. .	. .	49 46.45	+28.14	. .	−50.97	19 49 23.62	+ 0.28
	19	τ	Aquilæ. . . .	F.	40.7	13.2	44.7	50.0	53.0	55.0	1.3	2.8	5.2	58 52.98	− 1.04	. .	−50.97	19 58 0.97	+ 0.09
	20		B. A. C. 6983 . .	F.	9.0	12.0	15.0	24.1	27.2	30.1	39.2	41.7	45.1	12 27.14	− 0.50	. .	−51.01	20 11 35.63	− 0.94
	21		B. A. C. 6986 . .	F.	. .	. .	. .	. .	. .	. .	30.0	32.9	36.3	13 20.27	− 0.64	. .	−51.01	20 12 28.62	− 1.10
	22	π	Capricorni. . .	F.	48.2	51.0	52.0	59.0	1.2	3.3	9.0	11.5	14.1	21 1.20	− 1.32	−51.02	−51.01	20 20 8.87	+ 0.04
	23	ε	Delphini . . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	24		Groombridge 3241	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	25		B. A. C. 7169 . .	F.	9.3	25.9	35.4	1.0	14.2	27.5	. .	. .	. .	35 27.62	+ 2.36	. .	−51.01	20 34 38.97	+ 3.17
	26		B. A. C. 7178 . .	F.	. .	. .	22.5	35.7	48.7	2.2	14.5	. .	. .	36 48.72	+ 2.36	. .	−51.01	20 36 0.07	+ 3.12
	27	α	Cygni	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	28		Saturn I, S. . .	F.	11.0	13.7	15.3	. .	. .	. .	32.7	34.4	37.0	42 24.02	− 1.32	. .	−51.02	20 41 31.68	. .
	29		Saturn II, N. . .	F.	. .	. .	31.0	23.1	25.3	27.5	29.6	. .	. .	42 25.30	− 1.32	. .	−51.02	20 41 32.90	. .
	30	ν	Cygni	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	31		Anonymous . .	F.	. .	. .	48.0	50.0	53.2	56.1	58.6	. .	. .	1 53.30	− 0.66	. .	−51.02	21 1 1.62	. .
	32	ζ	Cygni	F.	14.0	17.0	18.7	25.7	28.2	30.0	37.6	39.4	42.2	8 28.16	− 0.79	−51.12	−51.02	21 7 36.35	+ 0.11
	33	α	Cephei	F.	. .	. .	17.8	22.1	26.3	30.0	35.3	. .	. .	16 26.48	− 0.06	. .	−51.03	21 15 35.30	+ 0.12
	34	ι	Pegasi	F.	. .	. .	. .	7.9	9.6	11.7	18.3	19.9	22.5	17 9.59	− 0.90	−51.00	−51.03	21 16 17.60	− 0.02
	35	ι	Draconis, S. P. .	F.	. .	. .	37.4	11.8	58.0	34.0	29.0	. .	. .	19 58.04	− 4.91	. .	−51.03	9 19 2.10	− 0.41
	36	β	Aquarii. . . .	F.	. .	. .	46.2	48.2	50.3	52.3	54.4	. .	. .	25 50.28	− 1.18	−51.00	−51.03	21 24 58.07	+ 0.06
	37		XXI, 12 . . .	F.	29.0	32.0	38.3	40.0	43.1	45.2	47.7	53.8	56.8	32 42.94	− 1.43	. .	−51.03	21 31 50.45	− 3.02
	38		B. A. C. 7585 . .	F.	57.5	0.1	1.8	8.5	10.7	12.9	19.5	21.0	23.5	41 10.61	− 0.88	. .	−51.04	21 40 18.66	− 2.14
	39	μ	Capricorni. . .	F.	8.0	10.7	12.2	18.7	20.8	22.9	29.1	30.6	33.3	47 20.70	− 1.26	−51.13	−51.04	21 46 28.40	+ 0.12
	40	79	Draconis . .	F.	. .	. .	55.3	2.5	9.5	16.5	23.0	. .	. .	52 9.36	+ 0.71	. .	−51.04	21 51 19.03	+ 0.16
	41	α	Aquarii	F.	1.2	3.8	5.2	11.4	13.4	15.5	21.7	23.2	25.6	0 13.44	− 1.12	−51.00	−51.04	21 59 21.28	− 0.01
	42		B. A. C. 7712 . .	F.	36.2	39.1	40.7	47.2	49.4	51.7	58.2	0.0	2.7	2 49.47	− 0.89	. .	−51.04	22 1 57.51	− 2.20
	43		B. A. C. 7733 . .	F.	. .	. .	22.8	24.0	27.0	29.2	31.5	. .	. .	5 27.08	− 0.90	. .	−51.04	22 4 35.1	→ 2.31
	44		Moon I, S. . . .	F.	30.5	33.0	34.8	41.4	43.6	45.7	52.4	54.0	57.0	9 43.60	− 1.30	. .	−51.04	22 8 51.20	+69.67
	45	τ	Aquarii. . . .	F.	33.0	35.6	37.1	43.2	45.3	47.5	53.5	55.0	57.5	19 45.30	− 1.11	−51.01	−51.04	22 18 53.15	− 0.01
	46		B. A. C. 7851 . .	F.	. .	. .	. .	21.0	47.8	13.9	39.8	. .	. .	23 47.58	+ 5.81	. .	−51.04	22 23 2.35	− 0.55
	47		XXII, 70 . . .	F.	. .	. .	35.2	37.7	40.1	42.5	45.0	. .	. .	32 40.10	− 1.51	.	−51.05	22 31 47.51	− 3.45
	48	α	Piscis Australis .	F.	. .	. .	34.8	37.0	39.3	41.8	46.5	48.3	51.3	51 37.05	− 1.46	−51.08	−51.05	22 50 44.51	+ 0.07
	49	α	Pegasi	F.	11.1	13.8	15.4	21.7	23.9	26.0	32.4	33.8	36.5	59 23.84	− 0.97	−51.05	−51.05	22 58 31.82	+ 0.03
	50	ο	Cephei	F.	49.5	56.2	0.0	16.2	21.3	26.8	42.5	46.5	53.3	14 21.37	+ 0.22	. .	−51.06	23 13 30.53	+ 0.22

7. Telescope micrometer reading decreased one revolution in reduction.
13, 20, 24, 25, 26, 40, 50. Bisections at sets B and D.
18. Bisections at wires C_8 and D_1.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	329 34	10 16.7	11.2	5.3	8.7	31	. .	025	. .	960	. .	83.4	30 21 17.8	. .	+ 35.0	81 28 14.0	− 1.4
2	341 14	16.1	10.2	3.9	7.0	31	. .	650	. .	570	. .	83.4	18 41 26.1	39.0	+ 20.3	69 48 7.6	− 1.1
3	330 40	6.9	4.0	27.3	0.3	37	625	595	. .	. .	. .	83.4	29 16 50.4	. .	+ 33.6	80 23 45.2	. .
4	297 32	13.0	7.6	2.1	6.5	31	. .	. .	. .	. .	530	83.4	62 23 22.9	. .	+ 1 54.2	113 31 38.3	+21.3
5	297 32	13.0	7.6	2.1	6.5	31	. .	. .	. .	750	. .	83.4	62 23 26.3	. .	+ 1 54.2	113 31 41.7	+21.3
6	343 54	15.2	8.3	3.5	6.0	30	. .	. .	. .	100	090	83.4	16 1 2.4	. .	+ 17.2	67 7 40.8	− 0.8
7	342 16	3.6	1.3	25.0	28.8	37	. .	994	. .	990	. .	81.5	17 42 37.0	51.5	+ 18.7	68 47 16.9	− 1.3
8	336 20	3.8	29.7	24.4	28.6	37	. .	. .	. .	468	472	81.5	23 36 44.1	. .	+ 25.5	74 43 30.8	− 1.1
9	15 26	15.2	10.5	7.5	7.3	35	. .	. .	. .	560	576	81.5	344 50 26.6	. .	− 16.1	35 36 31.7	− 1.5
10	52 22	1.9	27.9	24.7	29.8	32	352	326	324	302	238	81.5	307 33 24.0	. .	− 1 14.5	353 38 30.7	− 2.7
11	310 52	4.1	3.0	25.0	28.0	35	628	614	. .	. .	. .	81.5	49 1 16.2	64.7	+ 1 5.8	100 11 43.2	. .
12	310 20	9 19.5	15.5	9.1	10.6	37	. .	. .	. .	350	342	81.5	49 36 26.1	. .	+ 1 7.0	100 43 54.3	. .
13	35 42	10 5.0	0.5	26.7	29.2	35	. .	430	. .	440	. .	81.5	324 14 13.9	. .	− 41.0	15 19 54.1	−42.7
14	294 12	6.8	3.7	2.0	3.4	38	608	. .	. .	. .	. .	81.5	65 45 5.1	. .	+ 2 5.6	116 53 31.9	. .
15	294 12	6.8	3.7	2.0	3.4	40	. .	450	. .	. .	. .	81.5	65 45 33.7	. .	+ 2 5.6	116 54 0.5	. .
16	333 42	7.3	3.9	29.5	1 6	34	. .	. .	. .	050	104	81.5	26 13 56.1	66.9	+ 28.0	77 20 45.3	− 1.2
17	345 50	9 19.3	15.8	8.3	10.7	34	088	098	. .	. .	. .	81.5	11 5 35.3	. .	+ 11.2	62 12 8.7	− 1.6
18	49 56	29.7	25.2	14.5	18.7	30	. .	. .	. .	084	050	84.7	309 53 50.2	. .	− 1 8.8	1 4 2.6	+ 1.8
19	327 58	10 1.4	26.5	17.9	23.1	32	. .	. .	. .	580	574	84.7	31 57 23.0	56.0	+ 36.1	83 4 25.3	+ 0.6
20	8 22	4.5	0.9	22.8	25.8	33	. .	620	. .	618	. .	84.7	351 33 47.3	. .	− 8.6	42 33 59.9	+16.3
21	1 2	5.5	2.0	21.2	27.1	37	. .	. .	. .	610	612	84.7	358 54 49.6	. .	− 1.1	50 1 9.7	+15.8
22	302 26	9.1	4.2	25.5	3.8	32	. .	164	. .	160	. .	84.7	57 29 29.5	. .	+ 1 30.8	108 37 21.5	+ 0.8
23	331 56	3.8	29.5	20.9	29.0	35	880	870	. .	. .	. .	84.7	28 0 21.4	. .	+ 30.9	79 7 13.5	+ 0.5
24	33 8	17.2	12.6	3.7	6.9	32	. .	. .	. .	. .	225	84.7	326 47 37.9	. .	− 38.0	17 53 21.1	− 0.6
25	42 2	9.0	4.1	25.0	1.4	33	850	850	. .	. .	. .	84.7	317 53 51.9	. .	− 52.5	8 59 23.6	+21.0
26	42 2	9.0	4.1	25.0	1.4	37	336	. .	. .	. .	. .	84.7	317 54 43.4	. .	− 52.5	9 0 17.8	+21.1
27	5 52	9 25.7	20.7	14.0	16.0	33	. .	. .	. .	248	256	84.7	354 3 33.1	. .	− 6.1	45 9 48.2	− 0.5
28	301 50	26.5	22.1	12.3	20.7	34	850	. .	. .	. .	666	84.7	58 5 56.4	. .	+ 1 33.4	109 13 51.0	. .
29	301 50	26.5	22.1	12.3	20.7	33	. .	810	. .	810	. .	84.7	58 5 42.0	. .	+ 1 33.4	109 13 36.6	. .
30	1 44	10 8.2	4.9	26.1	1.3	35	. .	710	. .	676	. .	84.7	358 12 23.4	. .	− 1.8	49 18 42.8	+ 2.9
31	359 50	9 18.0	12.9	5.5	8.9	27	. .	281	. .	230	. .	84.7	0 3 53.3	. .	+ 0.1	51 10 14.6	. .
32	359 46	10 14.4	9.9	29.8	5.2	35	. .	832	. .	876	. .	84.7	9 10 30.9	. .	+ 9.4	60 17 1.5	+ 0.6
33	23 6	14.2	9.2	29 9	5.3	35	900	905	. .	. .	. .	84.7	336 50 31.5	. .	− 25.0	27 56 27.7	− 2.6
34	340 18	5.8	2.4	24.4	0.4	30	. .	. .	. .	440	450	84.7	19 37 1.5	. .	+ 20.8	70 43 43.5	+ 1.0
35	59 8	8.9	5.0	24.9	29.8	33	. .	090	. .	094	. .	84.7	309 47 40.6	. .	− 1 37.9	351 52 23.9	− 4.4
36	314 56	14.9	9.0	1.0	8.7	33	. .	. .	. .	626	616	84.7	41 50 57.5	. .	+ 58.4	96 7 17.1	+ 0.6
37	293 12	3.9	28.5	19.8	27.3	32	. .	. .	. .	744	756	84.7	66 43 32.9	50.8	+ 2 15.5	117 52 9.6	+ 3.2
38	343 26	18.1	12.5	3.0	7.2	37	232	2 0	. .	218	185	84.7	16 30 54.3	. .	+ 17.4	67 37 32.9	+18.8
39	300 56	11.6	5.7	28.3	4.5	37	290	250	. .	238	228	84.7	53 0 49.3	. .	+ 1 17.8	104 8 23.3	+ 1.1
40	31 8	17.3	12.8	3.2	7.9	31	. .	836	. .	850	. .	84.7	325 47 32.0	. .	− 39.9	16 53 13.3	− 0.1
41	320 8	16.0	10.0	0.5	7.3	35	. .	720	. .	700	. .	84.7	30 48 29.2	. .	+ 49.0	90 55 30.4	+ 1.7
42	342 8	11 1.1	25.0	18.2	23.3	31	046	038	. .	. .	. .	84.7	17 47 33.7	. .	+ 18.9	68 54 13.8	+19.5
43	341 24	10 11.3	5.0	23.8	1.0	31	. .	. .	. .	870	856	84.7	18 31 25.3	. .	+ 19.7	69 38 6.2	+19.4
44	303 50	9 28.4	24.0	15.5	24.7	31	310	120	930	750	540	84.7	56 5 16.0	. .	+ 1 27.3	107 13 4.5	. .
45	321 48	10 6.5	3.3	25.3	0.5	33	390	402	. .	. .	. .	84.7	33 8 17.1	. .	+ 46.2	89 15 24.5	− 0.3
46	46 30	5.5	1.0	23.0	27.0	34	. .	. .	083	. .	. .	84.7	313 25 55.1	. .	− 1 2.1	4 31 11.2	+24.0
47	257 22	6.1	0.7	20.8	23.7	36	. .	. .	. .	648	644	84.7	72 34 33.0	. .	+ 3 5.6	123 43 59.8	+ 6.2
48	299 48	19.9	12.3	4.1	10.4	34	. .	. .	. .	852	848	84.7	69 8 19.0	. .	+ 2 33.7	120 17 13.9	+ 1.3
49	335 34	8.2	4.3	23.5	1.9	31	022	034	. .	. .	. .	84.7	21 21 10.0	. .	+ 26.7	75 27 58.8	+ 0.1
50	28 28	19.7	15.5	9.3	10.8	35	. .	024	. .	032	. .	84.7	331 23 24.3	. .	− 32.1	22 34 13.4	− 2.7

No.	Barom.	At. Ther.
	in.	°
2	30.14	43.0
7	30.27	46.5
11	30.25	56.3
16	30.25	64.0
19	30.15	59.0
37	30.24	55 2

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	° ′ ″
3	− 0.1	. .	. .	− 0.1
11	− 6.7	+ 16 5.5	. .	+ 15 58.0
12	− 6.8	− 16 5.5	. .	− 16 12.3
14	− 15.3	+ 14.5	. .	− 0.8
15	− 15.3	− 14.5	+ 0.4	− 19.4
28	− 0.8	− 7.2	. .	− 8.0
29	− 0.8	+ 7.2	. .	+ 6.4
44	−48 49.3	− 16 6.7	. .	−1 4 56.0

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Oct. 20	1	λ Draconis, S. P.	F.	. .	. .	0.8	54.7	18.8	42.7	37.0	. .	. .	24 48.80	− 2.57	. .	−51.06	11 23 55.17	+ 0.33
	2	ι Piscium	F.	10.9	13.6	15.0	21.2	23.3	25.3	31.4	33.0	35.6	34 23.26	− 1.06	−51.02	−51.06	23 33 31.1.	− 0.04
	3	γ Cephei	F.	. .	. .	. .	. .	. .	23.0	41.3	47.9	59.0	35 5.00	+ 1.26	. .	−51.06	23 34 15.2(	+ 0.15
	4	Groombridge 4163	F.	. .	. .	30.6	37.4	44.8	52.3	6.4	12.2	21.0	49 37.50	+ 0.79	. .	−51.07	23 48 47.2:	+ 0.04
	5	B. A. C. 7	F.	59.0	3.9	7.0	18.(	22.5	26.5	38.2	41.1	45.7	3 22.50	− 0.19	. .	−51.07	0 2 31.2,	− 3.16
	6	O, 1	F.	. .	. .	. .	. .	. .	. .	59.4	1.3	4.7	7 48.83	− 1.59	. .	−51.07	0 6 56.17	− 3.81
	7	O, 9	F.	. .	. .	38.2	40.7	42.9	45.3	47.6	. .	. .	28 42.94	− 1.46	. .	−51.08	0 27 50.4(	− 3.59
	8	O, 10	F.	. .	. .	42.0	44.3	46.6	48.7	51.0	. .	. .	30 46.52	− 1.37	. .	−51.08	0 29 54.07	− 3.42
	9	β Ceti	F.	58.8	1.5	3.0	9.5	11.6	13.7	20.3	21.8	24.5	38 11.63	− 1.31	−51.12	−51.08	0 37 19.2,	+ 0.0)
	10	32[1] Camelopard., S. P.	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	11	32[2] Camelopard., S. P.	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	12	ε Piscium	E.	7.2	9.9	11.5	17.5	19.7	21.8	27.9	29.4	32.0	57 19.66	− 0.97	−51.22	−51.22	0 56 27.47	+ 0.02
	13	Polaris	E.	17.0	3.0	6.5	. .	. .	. .	38.5	41.0	. .	13 52.82	+20.43	. .	−51.22	1 13 22.03	− 0.33
	14	Polaris	F.	. .	. .	56.0	25.(	51.0	19.0	43.0	. .	. .	13 50.80	+20.43	. .	−51.09	1 13 20.14	− 2.22
	15	θ^1 Ceti	E.	26.7	29.4	31.0	37.2	39.2	41.3	47.4	49.1	51.6	18 39.21	− 1.12	−51.29	−51.23	1 17 46.8(	+ 0.08
	16	Parthenope	E.	18.3	20.9	22.5	26.5	28.4	30.6	32.8	34.8	. .	25 30.61	− 1.03	. .	−51.23	1 24 38.3:	. .
	17	o Piscium	E.	27.4	30.1	31.7	37.9	39.9	41.9	48.2	49.7	52.2	39 39.89	− 0.96	−51.20	−51.23	1 38 47.7(	− 0.06
	18	α Arietis	E.	46.4	49.3	50.9	57.5	59.8	2.0	8.6	10.3	13.1	0 59.77	− 0.82	−51.21	−51.24	2 0 7.71	− 0.02
	19	ξ^1 Ceti	E.	2.3	5.0	6.6	12.7	14.8	16.9	23.0	24.7	27.3	7 14.81	− 0.96	−51.25	−51.24	2 6 22.61	+ 0.05
	20	γ Ceti	E.	29.6	31.9	33.7	39.9	41.9	44.0	49.9	51.6	54.2	37 41.84	− 1.01	−51.25	−51.25	2 36 49.58	0.00
	21	α Ceti	E.	24.8	27.4	29.0	35.(	37.1	39.1	45.2	46.9	49.4	56 37.10	− 1.00	−51.24	−51.26	2 55 44.84	0.00
	22	Polaris, S. P.	S.	. .	. .	30.0	4.(	. .	. .	. .	. .	. .	14 37.50	. .	. .	. .		. .
22	23	α Cygni	Sk.	20.3	24.0	26.0	31.8	37.7	40.6	49.0	51.3	54.9	38 37.62	. .	. .	. .		. .
	24	ζ Cygni	Sk.	14.9	17.9	19.6	26.(	29.0	31.5	38.4	40.1	43.1	8 2).01	. .	. .	. .		. .
	25	β Aquarii	Sk.	. .	. .	46.6	48.5	50.7	52.7	54.7	. .	. .	25 50.64	− 1.1:	−51.48	−51.47	21 24 58.02	+ 0.04
	26	XXII, 12	Sk.	19.9	22.8	24.4	31.2	33.5	35.8	42.6	44.3	47.2	39 33.52	− 1.35	. .	−51.48	22 38 40.69	− 3.22
	27	Moon I, S.	Sk.	55.0	57.6	59.2	5.5	7.5	9.7	16.0	17.6	20.2	59 7.59	− 1.1:	. .	−51.50	23 58 14.96	+68.91
	28	O, 1	Sk.	33.5	36.9	38.9	46.9	49.2	51.9	59.7	1.8	5.0	7 49.29	− 1.52	. .	−51.50	0 6 56.27	− 3.80
	29	O, 12	Sk.	. .	. .	0.7	3.4	5.8	8.4	10.7	. .	. .	32 5.80	− 1.48	. .	−51.51	0 31 12.81	− 3.72
	30	O, 13	Sk.	. .	. .	. .	. .	. .	54.1	58.9	0.7	3.6	32 49.60	− 1.38	. .	−51.51	0 31 56.71	− 3.52
	31	ε Piscium	Sk.	7.7	10.4	11.9	17.9	20.1	22.3	28.4	30.0	32.5	57 20.13	− 1.03	− 51.63	−51.51	0 56 27.59	+ 0.14
	32	Polaris	Sk.	. .	. .	13.0	. .	. .	. .	42.0	40.5	30.0	13 54.92	+18.19	. .	−51.52	1 13 21.59	− 0.53
	33	Polaris	E.	. .	. .	0.0	25.0	52.0	17.5	43.0	. .	. .	13 51.33	+18.19	. .	−51.58	1 13 17.97	− 4.13
	34	θ^1 Ceti	Sk.	27.3	29.7	31.3	37.6	39.6	41.6	47.8	49.4	52.0	18 39.59	− 1.17	−51.62	−51.52	1 17 46.90	+ 0.12
	35	Parthenope	Sk.	34.2	36.9	38.5	44.3	46.4	48.6	54.5	56.2	58.7	23 46.48	− 1.09	. .	−51.52	1 22 53.87	. .
	36	η Piscium	E.	27.6	30.2	31.8	38.1	40.3	42.4	48.7	50.3	53.0	25 40.27	− 0.96	−51.52	−51.59	1 24 47.72	0.00
	37	o Piscium	E.	27.9	30.5	31.9	38.2	40.3	42.4	48.6	50.2	52.8	39 40.31	− 1.02	−51.55	−51.59	1 38 47.70	− 0.07
	38	β Arietis	Sk.	23.5	26.3	27.8	34.3	36.5	38.8	45.3	47.0	49.6	48 36.57	− 0.91	−51.43	−51.52	1 47 44.14	− 0.07
	39	I, 7	Sk.	33.6	36.6	38.3	45.0	47.8	50.2	57.2	59.0	1.8	51 47.79	− 1.40	. .	−51.52	1 50 54.87	− 3.48
	40	α Arietis	Sk.	46.8	49.5	51.3	57.7	59.9	2.3	8.9	10.5	13.4	1 0.03	− 0.88	−51.39	−51.53	2 0 7.62	− 0.13
	41	ξ^1 Ceti	E.	2.8	5.5	7.0	13.2	15.2	17.2	23.4	25.0	27.6	7 15.21	− 1.02	−51.57	−51.60	2 6 22.59	+ 0.01
	42	γ Ceti	E.	29.9	32.8	34.3	40.3	42.4	44.4	50.5	52.0	54.5	37 42.34	− 1.07	−51.65	−51.61	2 36 49.66	+ 0.05
	43	ζ Arietis	E.	22.5	25.2	27.0	33.3	35.6	37.9	44.3	46.0	48.8	8 35.62	− 0.90	−51.70	−51.61	3 7 43.11	+ 0.05
	44	12 Canum Venat.	E.	. .	. .	. .	. .	. .	. .	11.5	13 5	16.8	51 1.01	− 0.77	−51.68	−51.78	12 50 8.46	− 0.10
	45	Polaris, S. P.	E.	20.0	28.6	30.0	4.0	36.0	10.0	41.0	50.0	49.0	14 36.41	−18.86	. .	−51.79	1 13 25.76	+ 3.65
23	46	Sun I, N.	E.	42.0	44 6	46.2	52.4	54.4	56.6	2.9	4.5	7.0	51 54.51	− 1.2:	. .	−51.79	13 51 1.43	. .
	47	Sun II, S	E.	54.0	56.6	58.0	4 3	6.4	8.5	14.8	16.4	19.0	54 6.44	− 1.2:	. .	−51.79	13 53 13.36	. .
	48	α Coronæ Borealis	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	49	Venus I, N.	E.	16.3	19.2	20.9	27.8	30.0	32.4	39.3	41.0	44.0	48 30.10	− 1.47	. .	−51.81	16 47 36.82	+ 1.31
	50	Venus S.	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .

4, 18, 21, 36, 37, 41. Telescope micrometer readings decreased five revolutions in reduction.
3, 4, 10. Bisections at sets B and D.
11. Bisections at wires B_1 and C_1.
16, 28, 35. Wire A used.
48. Microscope revolutions 9, 10, 11, 9.
49. Microscope revolutions 9, 9, 10, 10.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	70 58	10 5.2	29.9	21.1	28.8	33	396	410	. .	. .	. .	84.7	288 57 44.1	46.3	− 2 50.6	340 1 14.7	+ 1.8
2	326 0	1.7	27.6	23.4	25.3	34	810	814	. .	. .	. .	84.7	33 56 4.1	. .	+ 39.8	85 3 5.1	+ 1.9
3	37 58	2.8	27.6	19.1	23.4	35	. .	. .	. .	700	696	84.7	321 58 16.7	. .	− 46.3	13 3 51.6	+ 1.0
4	34 44	19.5	11.4	4.8	5.5	36	. .	. .	. .	236	246	84.7	325 11 23.0	. .	− 41.2	16 17 3.0	− 0.6
5	19 30	6.7	2.0	26.5	28.8	35	472	516	. .	. .	. .	84.7	340 26 19.4	. .	− 21.1	31 32 19.5	+24.4
6	282 34	9.6	5.9	27.0	2.1	28	. .	. .	. .	632	634	84.7	77 20 36.0	. .	+ 4 18.4	128 31 15.6	+13.0
7	290 4	13.6	7.1	0.6	5.7	32	. .	. .	. .	728	738	84.7	69 51 42.0	. .	+ 2 40.6	121 0 43.8	+16.0
8	297 32	7.1	3.2	23.0	29.9	32	. .	. .	. .	685	695	84.7	62 23 35.5	. .	+ 1 53.2	113 31 49.9	+17.4
9	302 24	17.3	10.1	2.6	8.2	35	. .	776	. .	726	. .	84.7	57 32 30.9	44.3	+ 1 33.2	108 40 25.3	+ 1.5
10	56 56	1.0	25.6	17.4	22.6	38	774	900	. .	. .	. .	84.7	303 1 2.1	. .	− 1 31.3	354 5 52.0	+20.6
11	56 56	1.0	25.6	17.4	22.6	37	774	754	. .	. .	. .	84.7	303 0 45.9	. .	− 1 31.3	354 5 35.8	+ 4.4
12	328 16	14.8	8.2	4.0	3.5	33	. .	820	. .	780	. .	84.7	31 39 59.2	. .	+ 36.7	82 46 57.1	+ 0.3
13	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
14	49 40	1.6	22.7	20.8	22.5	35	835	800	794	804	790	84.7	310 16 16.8	. .	− 1 10.1	1 21 27.9	+ 1.5
15	312 14	14.7	8.1	29.7	6.8	34	910	860	. .	. .	. .	84.7	47 42 15.0	. .	+ 1 5.3	98 49 41.5	+ 1.0
16	321 28	17.7	12.4	2.2	12.2	33	450	385	. .	. .	. .	84.7	38 25 23.5	. .	+ 47.2	89 32 31.9	− 4.1
17	329 34	12.2	6.0	0.0	3.0	31	. .	450	. .	450	. .	84.7	30 21 20.9	. .	+ 34.9	81 28 17.0	+ 1.6
18	313 54	16.0	11.8	3.3	6.5	35	. .	075	. .	035	. .	84.7	16 1 3.7	. .	+ 17.1	67 7 42.0	+ 0.5
19	329 18	17.3	11.9	6.4	8.6	31	. .	415	. .	365	. .	84.7	30 37 25.7	. .	+ 35.3	81 44 22.2	+ 1.1
20	323 46	17.0	11.3	5.0	7.0	35	. .	005	. .	990	. .	84.7	36 10 20.0	. .	+ 43.6	87 17 24.8	+ 0.3
21	324 38	18.0	13.0	6.2	8.2	34	. .	490	. .	410	. .	84.7	35 16 56.3	42.0	+ 42.2	86 23 59.7	+ 0.2
22	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
23	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
24	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
25	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
26	295 10	11.5	5.5	24.6	28.7	31	900	840	. .	. .	. .	82.8	64 45 22.0	54.4	+ 2 3.0	115 53 46.2	+ 8.8
27	317 20	9.8	3.7	26.0	1.5	38	. .	638	240	940	. .	82.8	42 57 0.8	. .	+ 53.8	93 44 15.8	. .
28	282 34	15.3	9.8	1.2	5.2	38	. .	498	. .	482	. .	82.8	77 20 36.0	. .	+ 4 15.2	128 31 12.4	+12.6
29	285 0	10.8	5.5	26.7	1.3	36	662	662	. .	. .	. .	82.8	74 56 36.3	. .	+ 3 34.4	126 6 31.9	+14.9
30	292 46	18.0	10.5	3 0	7.5	33	. .	. .	. .	560	640	82.8	67 9 56.4	. .	+ 2 18.4	118 18 36.0	+16.4
31	328 16	22.4	17.7	9.8	12.2	33	. .	320	. .	310	. .	82.8	31 39 57.8	. .	+ 36.2	82 46 55.2	− 1.6
32	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
33	49 40	10.5	4.8	27.2	29.5	35	050	. .	085	. .	050	82.8	310 16 12.2	. .	− 1 9.3	1 21 24.1	− 1.6
34	312 14	15.5	9.7	3.4	7.5	34	. .	850	. .	830	. .	82.8	47 42 14.5	. .	+ 1 4.6	98 49 40.3	− 0.3
35	321 18	26.0	21.5	12.3	19.8	31	. .	. .	. .	394	400	82.8	38 34 59.9	. .	+ 46.9	89 42 8.0	− 4.1
36	335 44	23.5	18.7	13.0	18.0	34	. .	. .	. .	730	725	82.8	24 11 6.1	. .	+ 26.4	75 17 53.7	+ 1.5
37	329 34	18.2	12.4	5.7	11.0	36	. .	050	. .	010	. .	82.8	30 21 19.1	. .	+ 34.5	81 28 14.8	− 0.6
38	341 14	16.1	8.5	0.8	4.8	31	. .	875	. .	825	. .	82.8	18 41 27.4	. .	+ 19.9	69 48 8.5	0.0
39	291 36	22.6	14.8	8 8	11.3	34	205	175	. .	. .	. .	82.8	68 20 9.3	. .	+ 2 27.2	119 28 57.7	+20.8
40	343 54	10.8	4.1	26.0	0.1	30	. .	560	. .	480	. .	82.8	16 1 2.3	. .	+ 16.9	67 7 40.4	− 0.9
41	329 18	21.6	15.5	8.5	13.5	36	. .	180	. .	090	. .	82.8	30 37 23.6	49.1	+ 34.9	81 44 19.7	− 1.3
42	323 46	18.6	13.2	6.5	9.0	34	. .	910	. .	875	. .	82.8	36 10 18.2	. .	+ 43.2	87 17 22.6	− 2.0
43	341 38	16.4	11.7	3.3	8.7	35	. .	382	. .	330	. .	82.8	18 18 23.6	. .	+ 19.6	69 25 4.4	− 1.3
44	0 2	11.7	9.1	3.6	3.6	33	. .	. .	. .	550	500	81.0	359 53 51.4	65.0	− 0.1	51 0 12.5	− 2.5
45	52 22	11.0	5.5	0.0	2.5	31	. .	. .	840	. .	890	81.0	307 33 22.8	. .	− 1 14.0	358 38 30.0	− 4.4
46	309 48	13.2	8.8	2.0	8.0	34	140	170	. .	. .	. .	81.0	50 8 1.3	. .	+ 1 7.6	101 15 30.1	. .
47	309 16	19.5	16.9	9.3	17.5	34	. .	. .	. .	370	445	81.0	50 40 12.8	. .	+ 1 8.9	101 47 42.9	. .
48	348 12	9 3.8	28.2	7.2	15.3	38	. .	605	. .	565	. .	81.0	11 45 7.4	. .	+ 11.8	62 51 40.4	0.0
49	293 48	29.7	19.2	28.5	11.3	37	590	. .	. .	. .	600	81.0	66 9 0.3	. .	+ 2 7.1	117 17 28.6	. .
50	293 48	29.7	19.2	28.5	11.3	39	. .	740	. .	750	. .	81.0	66 9 33.4	. .	+ 2 7.1	117 18 1.7	. .

No.	Barom.	At. Ther.
	in.	°
1	30.24	51.5
9	30.25	48.0
21	30.22	45.0
26	30.30	58.5
41	30.29	54.0
44	30.37	60.5

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	″
27	−40 56.3	− 16 34.8	. .	− 57 31.1
46	− 6.8	+ 16 6.4	. .	+ 15 59.6
47	− 6.9	− 16 6.4	. .	− 16 13.3
49	− 16.6	+ 16.7	. .	+ 0.1
50	− 16.6	− 16.7	+ 0.3	− 33.0

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Oct. 23	1	λ Draconis, S. P.	E.	24.9	17.4	12.8	55.2	48.9	42.9	24.9	20.4	13.2	24 48.96	− 2.53	. .	−51.85	11 23 54.58	− 0.40
	2	γ Cephei (R.)	E.	. .	. .	44.7	54.2	2.9	11.9	20.6	. .	. .	35 2.86	+ 4.49	. .	−51.85	23 34 15.50	+ 0.59
	3	Groombridge 4163	E.	54.9	4.4	9.7	31.0	38.5	45.6	8.0	13.5	22.5	49 38.68	+ 0.75	. .	−51.85	23 48 47.58	+ 0.50
	4	XXIII, 18	E.	. .	. .	1.9	4.5	7.0	9.4	14.5	16.4	19.4	52 4.68	− 1.50	. .	−51.85	23 51 11.33	− 3.62
	5	α Andromedæ	E.	34.2	37.2	39.0	45.9	48.2	50.5	57.4	59.3	2.1	2 48.20	− 0.80	−51.84	−51.85	0 1 55.55	+ 0.01
	6	γ Pegasi	E.	28.0	30.7	32.2	38.6	10.8	42.9	49.0	50.7	53.4	7 40.70	− 0.96	−51.83	−51.85	0 6 47.80	− 0.02
	7	O, 2	E.	. .	. .	. .	. .	. .	22.4	27.0	28.7	31.7	8 17.85	− 1.40	. .	−51.85	0 7 24.60	− 3.47
	8	α Cassiopeæ (R.)	E.	54.2	58.9	1.6	. .	. .	. .	30.5	33.3	37.0	34 15.92	+ 1.27	. .	−51.85	0 33 25.31	− 0.20
	9	β Ceti	E.	59.5	2.2	3.8	10.4	12.5	14.7	21.0	22.7	25.4	38 12.47	− 1.30	−51.98	−51.86	0 37 19.31	+ 0.17
	10	Moon I, S.	E.	59.7	2.4	4.0	10.2	12.3	14.4	20.7	22.3	25.0	54 12.33	− 1.07	. .	−51.86	0 53 19.40	+69.71
	11	Polaris	E.	. .	. .	. .	29.0	56.0	24.0	45.0	. .	. .	13 55.28	+21.09	. .	−51.86	1 13 24.51	+ 2.47
	12	θ¹ Ceti	E.	27.5	30.0	31.7	37.9	40.0	42.0	48.0	49.8	52.3	18 39.91	− 1.20	−51.90	−51.86	1 17 46.85	+ 0.06
	13	η Piscium	E.	27.9	30.6	32.4	38.5	10.7	42.9	49.0	50.7	53.4	25 40.68	− 0.96	−51.93	−51.86	1 24 47.80	+ 0.14
	14	β Arietis	E.	24.0	26.6	28.3	34.9	37.0	39.1	45.7	47.5	50.0	48 37.01	− 0.90	−51.87	−51.86	1 47 44.25	+ 0.03
	15	Neptune	E.	29.0	31.5	33.2	39.2	41.3	43.5	49.7	51.2	53.7	52 41.37	− 1.01	. .	−51.86	1 51 48.50	. .
	16	α Arietis	E.	47.2	50.0	51.7	58.3	0.6	2.7	9.4	11.0	13.9	1 0.53	− 0.87	−51.89	−51.86	2 0 7.80	+ 0.04
25	17	ε Piscium	E.	8.2	10.7	12.3	18.5	20.6	22.7	28.8	30.3	33.0	57 20.57	− 1.04	−52.05	−52.07	0 56 27.46	0.00
	18	Polaris	E.	. .	. .	56.0	23.0	55.0	21.0	46.0	. .	. .	13 52.20	+21.55	. .	−52.08	1 13 21.67	− 0.33
	19	θ¹ Ceti	E.	27.5	30.2	31.8	37.9	40.0	42.2	48.3	49.9	52.6	18 40.04	− 1.20	−52.02	−52.08	1 17 46.76	− 0.04
	20	η Piscium	E.	28.2	30.8	32.4	38.8	40.8	43.0	49.3	50.9	53.5	25 40.86	− 0.96	−52.10	−52.08	1 24 47.82	+ 0.09
	21	o Piscium	E.	28.3	31.0	32.7	38.8	40.9	43.0	49.2	50.8	53.4	39 40.90	− 1.02	−52.12	−52.08	1 38 47.80	+ 0.01
	22	β Arietis	E.	24.1	26.9	28.6	35.0	37.2	39.4	46.0	47.6	50.4	48 37.24	− 0.90	−52.09	−52.08	1 47 44.26	+ 0.03
	23	Neptune	E.	16.4	19.0	20.6	26.9	28.9	31.0	37.0	38.7	41.3	52 28.87	− 1.02	. .	−52.08	1 51 35.77	. .
	24	α Arietis	E.	47.2	50.1	52.0	58.5	0.7	2.9	9.5	11.2	13.9	1 0.67	− 0.87	−52.01	−52.08	2 0 7.72	− 0.06
	25	ξ¹ Ceti	E.	3.3	5.9	7.5	13.6	15.7	17.8	23.9	25.5	28.0	7 15.69	− 1.03	−52.01	−52.08	2 6 22.58	− 0.03
	26	γ Ceti	E.	30.5	33.2	34.8	38.9	43.0	47.0	51.0	52.5	55.0	37 42.88	− 1.08	−52.15	−52.08	2 36 49.72	+ 0.07
	27	Moon II, N.	E.	28.8	31.7	33.1	39.8	42.0	44.3	50.9	52.5	55.3	53 42.64	− 0.92	. .	−52.09	2 52 49.03	−73.49
	28	α Ceti	E.	25.8	28.4	30.0	36.0	38.2	40.3	46.4	48.0	50.5	56 38.18	− 1.07	−52.17	−52.09	2 55 45.02	+ 0.10
	29	12 Canum Venat.	Sk.	45.7	48.8	50.9	58.8	1.3	3.8	11.9	13.8	17.0	51 1.33	− 0.74	−51.99	−51.99	12 50 8.60	0.00
	30	Polaris, S. P.	Sk.	. .	. .	35.0	2.0	36.0	10.0	44.0	. .	. .	14 37.40	−20.23	. .	−51.99	1 13 25.18	+ 3.18
26	31	Sun I, S.	Sk.	11.0	13.5	15.2	21.4	23.5	25.6	31.8	33.4	36.1	3 23.50	− 1.27	. .	−51.99	14 2 30.24	. .
	32	Sun II, N.	Sk.	23.5	25.9	27.6	33.8	35.9	38.1	34.5	36.0	38.7	5 36.01	− 1.27	. .	−51.99	14 4 42.75	. .
	33	α Coronæ Borealis	Sk.	0.8	3.8	5.3	12.1	14.5	16.8	23.7	25.4	28.4	30 14.53	− 0.89	−52.00	−52.00	15 29 21.64	0.00
	34	Mercury I, C.	Sk.	34.2	37.0	38.7	45.3	47.4	49.7	56.2	57.9	0.7	36 47.46	− 1.38	. .	−52.00	15 35 54.08	+ 0.25
	35	δ Ophiuchi	Sk.	26.5	29.0	30.5	36.6	38.7	40.7	46.9	48.4	50.9	8 38.69	− 1.18	−52.02	−52.00	16 7 45.51	+ 0.04
	36	α Scorpii	Sk.	22.0	24.8	26.5	33.3	35.6	37.8	44.7	46.4	49.2	22 35.59	− 1.42	−52.09	−52.00	16 21 42.17	+ 0.08
	37	ζ Ophiuchi	Sk.	57.7	59.3	3.5	5.5	7.6	9.6	11.6	15.7	17.4	31 7.54	− 1.25	−51.98	−52.00	16 30 14.29	− 0.02
	38	η Herculis	Sk.	. .	. .	22.3	24.6	27.3	30.0	32.7	. .	. .	39 27.38	− 0.73	−51.92	−52.00	16 38 34.65	− 0.07
	39	XXIII, 18	Sk.	. .	. .	59.4	2.0	4.8	7.2	9.6	. .	. .	52 4.66	− 1.45	. .	−52.24	23 51 10.97	− 3.60
	40	Anonymous	Sk.	. .	. .	. .	. .	. .	. .	13.9	16.0	19.0	53 3.64	− 1.51	. .	−52.24	23 52 9.89	− 3.72
	41	α Andromedæ	Sk.	34.4	37.4	39.0	46.0	48.4	50.7	57.5	59.3	2.2	2 48.32	− 0.74	−52.03	−52.24	0 1 55.34	− 0.19
	42	O, 2	Sk.	4.1	7.0	8.8	15.8	18.0	20.3	27.0	28.8	31.6	8 17.93	− 1.35	. .	−52.24	0 7 24.31	− 3.45
	43	O, 12	Sk.	. .	. .	1.4	4.0	6.5	8.9	11.4	. .	. .	32 6.44	− 1.49	. .	−52.24	0 31 12.71	− 3.71
	44	β Ceti	Sk.	59.7	2.4	4.0	10.6	12.6	14.7	21.2	22.8	25.6	38 12.62	− 1.25	−52.18	−52.24	0 37 19.13	− 0.01
	45	32¹ Camelopard., S. P.	Sk.	. .	. .	39.0	19.0	59.6	41.0	19.0	. .	. .	48 59.52	− 6.28	. .	−52.24	12 48 1.00	− 6.55
	46	32² Camelopard., S. P.	Sk.	. .	. .	46.0	25.6	6.9	47.6	27.2	. .	. .	49 6.66	− 6.28	. .	−52.24	12 48 8.14	+ 0.59
	47	ε Piscium	E.	8.5	11.0	12.6	18.8	20.9	22.9	29.0	30.5	33.0	57 20.80	− 0.98	−52.34	−52.24	0 56 27.58	+ 0.12
	48	Polaris	E.	24.0	8.5	9.5	. .	. .	. .	44.0	32.0	. .	13 56.64	+21.96	. .	−52.24	1 13 26.36	+ 4.37
	49	Polaris	Sk.	. .	. .	59.5	27.0	55.5	21.5	47.0	. .	. .	13 54.10	+21.96	. .	−52.24	1 13 23.82	+ 1.83

4. Bisections at wires IV and V.
45, 46. Bisections at sets B and D.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	70 58	10 12.0	5.6	10.2	17.8	31	. .	850	750	960	. .	92.0	288 57 39.8	. .	− 2 48.6	340 1 12.4	+ 0.5
2	141 54	3.7	0.3	4.5	12.9	32	. .	. .	560	575	720	92.0	218 1 45.7	. .	+ 45.8	13 3 49.7	+ 0 1
3	34 44	3.0	27.5	3.4	7.3	31	. .	035	. .	080	. .	92.0	325 11 20.8	. .	− 40.7	16 17 1.3	− 1.3
4	287 12	5.3	29.0	4.0	12.3	32	. .	. .	820	. .	790	92.0	72 43 48.8	. .	+ 3 6.2	123 53 16.2	+12.2
5	349 26	6.3	0.8	6.3	12.5	30	. .	930	. .	955	. .	92.0	10 29 21.8	. .	+ 10.9	61 35 53.9	− 0.5
6	335 32	1.2	24.2	0.6	8.6	33	230	140	. .	. .	. .	92.0	24 23 50.4	. .	+ 26.6	75 30 38.2	0.0
7	294 6	5.8	0.4	6.5	16.2	34	. .	. .	. .	900	890	92.0	65 50 22.9	. .	+ 2 10.1	116 58 54.2	+14.8
8	163 0	2.5	27.7	29.0	6.7	38	. .	. .	. .	640	710	92.0	196 57 14.5	. .	+ 17.9	34 8 48.8	− 1.5
9	302 24	9 28.3	24.3	0.0	8.0	35	. .	880	. .	860	. .	92.0	57 32 30.6	51.0	+ 1 32.3	108 40 24.1	0.0
10	324 48	10 7.5	2.7	8.6	16.2	36	940	740	550	190	035	92.0	35 8 48.8	. .	+ 41.4	86 15 51.4	. .
11	49 40	9 24.0	17.5	24.0	0.8	35	085	. .	075	. .	115	92.0	310 16 13.0	. .	− 1 9.5	1 21 24.7	− 0.7
12	312 14	10 2.7	27.2	2.7	10.0	34	. .	690	. .	620	. .	92.0	47 42 15.0	. .	+ 1 4.8	98 49 41.0	+ 0.3
13	335 44	2.5	26.3	2.0	11.6	30	. .	070	. .	995	. .	92.0	24 11 4.3	. .	+ 26.5	75 17 52.0	− 0.2
14	311 14	4.4	27.9	4.5	11.3	31	. .	460	. .	365	. .	92.0	18 41 26.9	. .	+ 20.0	69 48 8.1	− 0.3
15	330 36	6.5	0.7	5.7	14.8	30	. .	310	. .	300	. .	92.0	29 19 12.3	. .	+ 33.2	80 26 6.7	. .
16	343 54	0.9	27.5	3.5	9.2	29	. .	900	. .	875	. .	92.0	16 1 1.9	49.0	+ 17.0	67 7 40.1	− 1.1
17	328 16	5.8	1.7	9.4	15.0	33	. .	180	. .	175	. .	91.6	31 39 57.0	48.5	+ 36.5	82 46 54.7	− 2.0
18	49 40	9 25.8	18.6	25.0	2.0	34	990	. .	030	. .	015	91.6	310 16 12.7	. .	− 1 9.7	1 21 24.2	− 0.5
19	312 14	10 1.3	25.7	2.0	11.1	34	. .	685	. .	660	. .	91.6	47 42 14.3	. .	+ 1 5.0	98 49 40.5	− 0.3
20	335 44	0.9	22.7	0.6	9.8	30	. .	175	. .	140	. .	91.6	24 11 3.8	. .	+ 26.6	75 17 51.6	− 0.5
21	329 34	1.0	25.3	2.8	10.8	30	. .	975	. .	970	. .	91.6	30 21 17.7	. .	+ 34.7	81 28 13.6	− 1.7
22	341 14	4.5	26.8	4.2	12.7	31	. .	485	. .	400	. .	91.6	18 41 27.1	. .	+ 20.0	69 48 8.3	+ 0.1
23	330 36	6.4	0.0	6.4	12.5	34	. .	955	. .	960	. .	91.6	29 20 22.6	. .	+ 33.3	80 27 17.1	. .
24	343 54	0.0	26.3	2.2	9.7	29	. .	865	. .	845	. .	91.6	16 1 0.3	. .	+ 17.0	67 7 38.5	− 2.5
25	329 18	4.7	29.8	8.2	17.3	30	. .	975	. .	930	. .	91.6	30 37 22.4	. .	+ 35.0	81 44 18.6	− 2.4
26	323 46	5.0	28.2	4.7	13.8	34	. .	730	. .	715	. .	91.6	36 10 18.1	. .	+ 43.4	87 17 22.7	− 2.0
27	339 14	9 29.7	25.5	0.0	7.8	30	770	590	320	125	900	91.6	20 41 6.4	. .	+ 22.4	71 47 50.0	. .
28	324 38	10 7.0	0.6	7.7	17.0	29	. .	000	. .	980	. .	91.6	35 16 53.0	46.5	+ 42.0	86 23 56.2	− 3.5
29	0 2	9 20.5	24.5	24.6	28.7	33	. .	. .	. .	970	955	92.5	359 53 57.2	62.8	− 0.1	51 0 18.3	+ 2.3
30	52 22	21.4	24.5	25.0	29.3	32	307	. .	250	. .	262	92.5	307 33 30.8	. .	− 1 14.2	358 38 37.8	+ 2.3
31	308 14	29.2	4.7	29.0	7.2	35	750	782	. .	. .	. .	92.5	51 42 31.9	68.7	+ 1 11.7	102 50 4.8	. .
32	308 46	27.6	24.8	1.2	8.6	34	. .	. .	. .	662	728	92.5	51 10 13.4	. .	+ 1 10.3	102 17 44.9	. .
33	348 10	14.1	13.6	20.1	25.1	31	. .	. .	. .	380	400	92.5	11 45 11.3	. .	+ 11.7	62 51 44.2	+. 3.1
34	298 42	16.2	14.6	21.0	25.6	36	. .	672	. .	672	. .	92.5	61 14 32.6	. .	+ 1 42.3	112 22 36.1	. .
35	317 42	19.0	16.9	24.5	28.4	38	. .	. .	. .	350	290	92.5	42 15 1.1	. .	+ 51.1	93 22 13.4	+ 1.9
36	294 56	10 0.7	0.4	7.6	10.2	36	. .	962	. .	900	. .	92.5	65 0 51.9	. .	+ 2 0.0	116 9 13.1	+ 1.8
37	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. . .	. .
38	0 12	9 29.0	29.5	6.8	7.5	33	. .	. .	. .	204	180	92.5	339 43 54.0	72.4	− 0.3	50 50 14.9	+ 2.9
39	287 12	10 6.8	29.8	4.9	12.7	32	750	810	. .	. .	. .	92.5	72 43 49.1	. .	+ 3 6.3	123 53 16.6	+11.6
40	283 32	5.4	9.0	5.0	12.0	34	. .	. .	. .	465	514	92.5	76 24 17.4	. .	+ 3 57.8	127 34 36.4	+10.8
41	349 26	8.0	2.8	6.4	13.0	30	. .	870	. .	910	. .	92.5	10 29 22.5	. .	+ 10.9	61 35 54.6	+ 0.6
42	294 6	8.9	3.3	8.5	17.6	34	. .	820	. .	845	. .	92.5	65 50 24.6	49.4	+ 2 10.0	116 58 55.8	+14.4
43	285 0	9 29.3	23.0	28.4	6.8	36	620	715	. .	. .	. .	92.5	74 56 41.9	. .	+ 3 34.7	126 6 37.8	+14.8
44	302 24	10 5.4	28.2	4.0	12.1	35	. .	650	. .	568	. .	92.5	57 32 31.9	. .	+ 1 32.1	108 40 25.2	+ 0.7
45	56 56	8.3	2.3	9.0	15.8	37	156	. .	. .	. .	168	92.5	303 0 58.9	. .	− 1 30.1	354 5 50.0	+20.9
46	56 56	8.3	2.3	9.0	15.8	35	928	. .	. .	. .	984	92.5	303 0 40.4	. .	− 1 30.1	354 5 31.5	+ 2.4
47	328 16	5.7	1.7	8.9	15.0	33	. .	295	. .	235	. .	92.5	31 39 59.0	. .	+ 36.2	82 46 56.4	− 0.3
48	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. . .	. .
49	49 40	9 24.8	18.0	26.2	3.0	34	940	. .	980	. .	005	92.5	310 16 13.1	. .	− 1 9.3	1 21 25.0	+ 0.7

No.	Barom.	At. Ther.
	in.	°
9	30.37	55.5
16	30.39	52.5
17	30.36	53.0
28	30.33	50.5
29	30.30	57.5
31	30.28	62.5
38	30.23	67.8
42	30.16	52.5

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
10	−35 4.2	− 16 43.4	. .	− 51 47.6
15	− 0.2	. .	. .	− 0.2
23	− 0.2	. .	. .	− 0.2
27	−21 26.3	+ 16 43.7	. .	− 4 42.6
31	− 7.0	− 16 9.9	. .	− 16 16.9
32	− 6.9	+ 16 9.9	. .	+ 16 3.0
34	− 8.0	. .	0.0	− 8.0

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Oct. 26	1	θ^1 Ceti. . . .	Sk	28.0	30.4	32.0	38.1	40.2	42.4	48.6	50.0	52.7	18 40.27	— 1.14	—52.31	—52.24	1 17 46.89	+ 0.09
	2	η Piscium . . .	E.	28.2	31.0	32.5	36.7	41.0	45.3	49.4	50.9	53.6	25 40.96	— 0.90	—52.25	—52.25	1 24 47.81	+ 0.07
	3	o Piscium . . .	E.	. .	. .	38.8	41.0	43.0	45.1	49.2	50.9	53.4	39 40.97	— 0.96	—52.24	—52.25	1 38 47.76	— 0.04
	4	β Arietis . . .	E.	24.3	27.0	28.7	35.2	37.5	39.6	46.0	47.9	50.6	48 37.42	— 0.84	—52.32	—52.25	1 47 44.33	+ 0.09
	5	Neptune . . .	Sk.	10.2	12.8	14.3	20.5	22.7	24.7	31.0	32.5	35.3	52 22.67	— 0.96	. .	—52.25	1 51 29.46	. .
	6	I, 10 . . .	Sk.	35.7	38.7	40.3	47.8	50.3	52.8	0.1	2.0	5.0	53 50.30	— 1.45	. .	—52.25	1 52 56.60	— 3.57
	7	a Arietis . . .	E.	47.6	50.4	52.0	58.6	0.8	3.0	9.7	11.4	14.0	1 0.83	— 0.81	—52.22	—52.25	2 0 7.77	— 0.02
	8	ξ^1 Ceti. . . .	E.	6.0	7.7	11.7	13.9	16.0	18.0	20.0	24.2	25.8	7 15.92	— 0.97	—52.29	—52.25	2 6 22.70	+ 0.08
	9	η Tauri . . .	Sk.	43.0	45.8	47.4	54.0	56.3	58.5	5.2	6.9	9.7	40 56.31	— 0.80	—52.21	—52.25	3 40 3.26	— 0.04
	10	ζ Persei . . .	Sk.	55.0	58.2	59.9	7.0	9.4	11.9	19.1	20.9	23.8	47 9.47	— 0.70	—52.23	—52.26	3 46 16.51	— 0.04
	11	γ^1 Eridani. . .	Sk.	53.0	55.7	57.2	. .	. .	7.7	9.9	. .	. .	53 5.64	— 1.19	—52.23	—52.26	3 52 12.19	+ 0.01
	12	Moon II, N. . .	Sk.	4.8	7.7	9.3	16.3	18.5	20.9	27.5	29.4	32.3	57 18.52	— 0.80	. .	—52.26	3 56 25.46	—75.60
	13	Polaris, S. P. . .	E.	. .	. .	33.0	6.0	38.0	. .	49.0	. .	. .	14 40.20	—26.02	. .	—52.26	1 13 21.92	— 0.05
27	14	a Coronæ Borealis .	E.	1.0	4.0	5.7	12.4	14.8	17.3	24.0	25.8	28.6	30 14.84	— 0.95	—52.25	—52.29	15 29 21.60	— 0.04
	15	a Serpentis . . .	E.	45.5	48.2	49.6	55.8	58.0	0.1	6.2	7.5	10.2	38 57.90	— 1.21	—52.21	—52.29	15 38 4.40	— 0.06
	16	Venus I, N. . .	E.	. .	. .	. .	. .	. .	. .	52.8	54.4	57.4	0 43.54	— 1.68	. .	—52.30	16 59 49.56	+ 1.43
	17	a^1 Herculis . . .	E.	35.8	38.4	40.0	46.4	48.5	50.6	57.0	58.5	1.1	9 48.48	— 1.12	—52.40	—52.30	17 8 55.06	+ 0.12
	18	a Ophiuchi . . .	E.	47.0	49.6	51.1	57.4	59.5	1.6	7.9	9.5	12.0	29 59.51	— 1.14	—52.31	—52 30	17 29 6.07	+ 0.04
28	19	a Cygni . . .	F.	45.3	48.9	50.9	59.7	2.5	5.5	14.1	16.3	19.9	38 2.57	— 0.48	—52.86	—52.83	20 37 9.26	+ 0.05
	20	B. A. C. 7204 . .	F.	47.1	50.2	52.0	59.2	1.7	4.2	11.5	13.3	16.4	42 1.73	— 0.64	. .	—52.83	20 41 8.26	— 1.39
	21	Saturn N. . . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	22	Saturn S. . . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	23	B. A. C. 7241 . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	24	ζ Cygni . . .	F.	15.5	18.5	20.2	27.2	29.5	31.9	39.0	40.7	43.7	8 29.58	— 0.68	—52.80	—52.83	21 7 36.07	— 0.02
	25	a Cephei (R.) . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	26	β Aquarii . . .	F.	39.4	42.0	43.5	49.7	51.6	53.8	59.9	1.4	4.0	25 51.70	— 1.03	—52.74	—52.83	21 24 57.84	— 0.06
	27	ξ Aquarii . . .	F.	46.4	49.0	50.6	56.8	58.9	0.9	7.0	8.7	11.2	31 58.83	— 1.05	—52.71	—52.84	21 31 4.94	— 0.11
	28	11 Cephei. . . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	29	Moon II, N. . .	F.	30.5	33.4	35.2	42.5	44.8	47.2	54.4	56.1	59.0	10 44.79	— 0.63	. .	—52.92	6 9 51.24	—76.54
	30	γ Geminorum . .	F.	. .	. .	18.4	20.5	22.6	24.7	26.8	. .	. .	31 22.60	— 0.75	—52.92	—52.93	6 30 28.92	— 0.04
	31	51 Cephei . . .	F.	. .	. .	35.5	19.0	0.5	44.5	26.0	. .	. .	42 1.10	+ 9.51	. .	—52.93	6 41 17.68	— 0.79
	32	ε Canis Majoris. .	F.	. .	. .	32.0	34.4	36.8	39.0	41.4	. .	. .	54 36.72	— 1.22	—52.95	—52.93	6 53 42.57	— 0.03
	33	δ Canis Majoris. .	F.	58.7	1.6	3.2	10.0	12.3	14.6	21.4	23.0	26.0	4 12.31	— 1.18	—52.97	—52.93	7 3 18.20	— 0.01
	34	δ Geminorum . .	F.	. .	. .	28.0	30.2	32.4	34.6	36.8	. .	. .	13 32.40	— 0.70	—53.02	—52.93	7 12 38.77	+ 0.03
	35	a^2 Geminorum . .	F.	15.6	18.7	20.4	27.6	30.1	32.4	39.8	41.6	44.6	27 30.09	— 0.58	—53.02	—52.93	7 26 36.58	+ 0.33
	36	a Canis Minoris .	F.	. .	. .	34.4	36.4	38.6	40.6	42.6	. .	. .	33 38.52	— 0.86	—53.01	—52.94	7 32 44.72	— 0.09
	37	β Geminorum . .	F.	. .	. .	27.9	30.2	32.5	34.9	37.3	. .	. .	38 32.56	— 0.63	—52.86	—52.94	7 37 38.99	— 0.11
	38	ϕ Geminorum . .	F.	29.7	32.5	34.1	41.0	43.4	45.8	52.5	54.2	57.0	46 43.36	— 0.64	—52.88	—52.94	7 45 49.78	— 0.14
	39	λ Ursæ Minoris, S. P.	F.	. .	. .	10.0	22.0	28.0	39.0	. .	. .	. .	50 30.00	—27.82	. .	—52.94	19 49 9.24	— 2.83
	40	Anonymous . .	F.	36.8	39.4	41.0	47.3	49.4	51.5	58.0	59.5	2.2	21 49.46	— 0.75	. .	—52.94	8 20 55.77	— 2.39
	41	a Ursæ Majoris . .	S.	. .	. .	41.8	46.3	50.7	55.2	59.6	. .	. .	56 50.72	— 0.11	. .	—52.90	10 55 57.71	— 0.22
	42	β Leonis . . .	S.	. .	. .	28.6	30.7	32.8	34.9	37.0	. .	. .	43 32.80	— 0.96	—52.79	—52.90	11 42 38.94	— 0.13
	43	Polaris, S. P. . .	S.	. .	. .	29.0	2.0	37.0	9.0	41.0	. .	. .	14 35.60	—21.28	. .	—52.91	1 13 21.41	— 0.43
	44	a Virginis . . .	S.	. .	. .	. .	. .	. .	32.5	36.5	38.0	40.6	19 28.20	— 1.22	—52.83	—52.91	13 18 34.07	— 0.10
29	45	Sun I, S. . . .	S.	. .	. .	. .	59.3	1.4	3.4	7.6	9.3	12.0	14 59.27	— 1.26	. .	—52.92	14 14 5.09	. .
	46	Sun II, N. . . .	S.	59.8	2.6	4.0	10.5	12.5	14.7	21.0	22.5	25.2	17 12.53	— 1.26	. .	—52.92	14 16 18.35	. .
	47	B. A. C. 7213 . .	S.	10.0	13.2	14.9	22.6	25.2	27.8	35.2	37.0	40.3	43 25.13	— 0.68	. .	—52.95	20 42 31.50	— 1.31
	48	ν Cygni	S.	7.4	10.7	12.8	20.8	23.6	26.3	34.3	. .	39.7	53 23.54	— 0.68	—53.00	—52.95	20 52 29.91	+ 0.11
	49	σ^2 Ursæ Majoris, S. P.	S.	. .	. .	26.1	20.4	15.2	9.7	4.3	. .	. .	0 15.14	— 1.95	. .	—52.95	8 59 20.24	— 0.55
	50	ζ Cygni	S.	15.8	18.8	20.6	27.6	30.0	32.3	39.3	41.2	44.0	8 29.96	— 0.82	—53.06	—52.95	21 7 36.19	+ 0.12

12, 19, 29, 41, 49. Bisections at sets B and D.
30. Telescope micrometer reading increased five revolutions in reduction.
32. Telescope micrometer reading decreased five revolutions in reduction.
48. Bisections at set C.
49. Telescope micrometer reading increased one revolution in reduction.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	312 14	10 5.3	0.0	5.6	12.7	34	. .	535	. .	510	. .	92.5	47 42 16.3	. .	+ 1 4.5	98 49 42.0	+ 1.1
2	335 44	1.5	26.6	1.6	9.4	30	. .	135	. .	050	. .	92.5	24 11 5.0	. .	+ 26.4	75 17 52.6	+ 0.6
3	320 34	4.8	27.0	4.7	12.3	30	. .	. .	. .	930	925	92.5	30 21 20.5	. .	+ 34.4	81 28 16.1	+ 0.8
4	341 14	6.3	0.8	5.5	14.0	31	. .	245	. .	260	. .	92.5	18 41 27.1	. .	+ 19.9	69 48 8.2	+ 0.1
5	330 36	6.7	0.3	6.6	13.6	37	. .	290	. .	270	. .	92.5	29 20 59.5	. .	+ 33.1	80 27 53.8	. .
6	287 24	7.0	0.0	4.3	12.0	29	. .	. .	. .	768	715	92.5	72 31 3.0	. .	+ 3 4.5	123 40 28.7	+19.6
7	343 54	3.0	28.0	5.0	11.7	29	. .	765	. .	785	. .	92.5	16 1 2.3	. .	+ 16.9	67 7 40.4	− 0.5
8	329 18	9.3	4.2	10.5	18.8	30	. .	845	. .	835	. .	92.5	30 37 24.8	. .	+ 34.8	81 44 20.8	− 0.2
9	344 46	7.3	29.8	3.3	12.8	34	. .	461	. .	461	. .	92.5	15 10 15.4	. .	+ 16.0	66 16 52.6	+ 0.1
10	352 34	7.4	1.1	4.8	11.3	36	. .	498	. .	520	. .	92.5	7 22 47.2	. .	+ 7.6	58 29 16.0	− 0.8
11	307 12	5.3	29.2	3.2	11.0	33	900	878	. .	. .	. .	92.5	52 44 4.9	. .	+ 1 17.4	103 51 43.5	+ 0.6
12	344 32	2.9	26.9	1.1	9.5	38	000	. .	870	713	. .	92.5	15 25 4.7	45.5	+ 16.3	66 31 42.2	. .
13	52 22	9 25.7	21.7	0.0	3.8	31	870	. .	. .	. .	790	92.2	307 33 26.4	. .	− 1 13.9	358 38 33.7	− 2.2
14	348 12	22.2	20.2	26.3	2.2	38	. .	735	. .	710	. .	92.2	11 45 9.8	. .	+ 11.5	62 51 42.5	+ 1.2
15	327 52	25.5	22.7	28.8	5.6	33	. .	000	. .	030	. .	92.2	32 3 45.2	77.0	+ 34.6	83 10 41.0	− 0.2
16	293 22	10 1.6	29.0	6.8	13.3	30	. .	. .	. .	765	755	92.2	66 33 17.8	. .	+ 2 6.6	117 41 45.6	. .
17	335 34	9 27.3	24.7	4.2	9.5	30	. .	310	. .	230	. .	92.2	24 21 6.5	. .	+ 25.0	75 27 52.7	+ 0.5
18	333 42	24.1	20.8	29.1	3.9	34	. .	080	. .	060	. .	92.2	26 14 0.3	77.0	+ 27.2	77 20 48.7	+ 1.5
19	5 52	10 5.3	0.7	5.6	12.2	31	. .	678	. .	696	. .	90.5	354 3 31.0	. .	− 5.9	45 9 46.3	− 2.1
20	354 32	15.3	10.7	14.3	23.3	30	. .	118	. .	102	. .	90.5	5 23 17.0	. .	+ 5.3	56 29 43.5	+18.2
21	301 54	15.3	9.9	15.5	24.7	36	. .	. .	. .	560	. .	90.5	58 2 56.2	. .	+ 1 30.5	109 10 47.9	. .
22	301 54	15.3	9.9	15.5	24.7	37	. .	. .	. .	. .	574	90.5	58 3 11.7	. .	+ 1 30.5	109 11 3.4	. .
23	4 38	24.9	20.8	28.2	4.3	33	. .	. .	. .	088	044	90.5	355 18 14.1	64.1	− 4.7	46 24 30.6	+21.9
24	350 46	19.6	13.0	17.7	27.2	34	. .	688	. .	670	. .	90.5	9 10 30.4	. .	+ 9.2	60 17 0.8	+ 0.1
25	156 46	13.0	7.8	13.3	24.3	31	. .	. .	. .	122	172	90.5	203 9 30.7	. .	+ 24.3	27 56 26.4	− 3.0
26	314 56	4.0	28.9	1.6	12.3	33	668	652	. .	604	590	90.5	44 59 58.9	. .	+ 56.8	96 7 16.9	+ 0.1
27	312 38	18.5	11.9	16.0	24.8	30	. .	926	. .	922	. .	90.5	47 17 31.1	. .	+ 1 1.6	98 24 53.9	− 1.3
28	31 46	17.6	11.8	15.3	24.8	32	. .	. .	. .	348	322	90.5	328 9 53.9	61.0	− 35.4	19 15 39.7	− 2.2
29	349 22	16.9	9.1	13.9	22.2	28	860	. .	856	. .	856	91.1	10 32 57.8	. .	+ 10.9	61 39 29.9	. .
30	337 34	13.6	7.3	10.8	19.1	31	. .	248	. .	246	. .	91.1	22 22 48.2	. .	+ 24.0	73 29 33.4	− 0.7
31	48 16	15.1	7.9	12.4	20.6	35	996	006	010	028	038	91.1	311 40 46.0	49.1	− 1 5.4	2 46 1.8	− 1.1
32	292 16	14.3	6.1	10.7	20.3	34	. .	500	. .	490	. .	91.1	67 39 4.7	. .	+ 2 20.8	118 47 46.7	− 0.9
33	294 54	0.3	23.6	27.8	9.7	37	. .	. .	. .	542	552	91.1	65 2 55.8	. .	+ 2 4.7	116 11 21.7	+ 1.2
34	343 16	7.2	1.1	6.1	15.1	35	634	620	. .	. .	. .	91.1	16 40 33.2	48.9	+ 17.5	67 47 11.9	− 0.1
35	353 12	8.5	1.0	6.2	13.5	32	. .	694	. .	688	. .	91.1	6 43 48.4	. .	+ 6.9	57 50 16.5	+ 0.5
36	326 36	10.4	3.2	8.9	19.7	33	. .	780	. .	774	. .	91.1	33 20 8.2	. .	+ 38.3	84 27 7.7	+ 0.1
37	349 22	12.0	4.8	8.8	16.9	32	. .	260	. .	250	. .	91.1	10 33 45.1	. .	+ 10.9	61 40 17.2	− 0.4
38	348 8	17.9	10.2	14.4	26.4	33	036	030	. .	. .	. .	91.1	11 48 3.3	. .	+ 12.2	62 54 36.7	− 0.4
39	52 6	6.8	0.1	4.4	13.8	36	. .	930	915	910	. .	91.1	307 50 51.6	. .	− 1 14.8	358 55 58.0	− 1.5
40	337 46	12.1	4.5	8.1	19.8	32	. .	708	. .	680	. .	91.1	22 9 52.2	. .	+ 23.7	73 16 37.1	+ 0.1
41	23 28	9 26.5	24.0	0.3	5.0	36	070	. .	. .	. .	150	91.3	336 28 32.6	55.3	− 25.0	27 34 28.8	− 2.5
42	336 20	12.9	10.0	14.8	24.8	37	. .	. .	. .	911	871	91.3	23 36 46.9	63.5	+ 24.8	74 43 32.9	− 0.8
43	52 22	28.9	27.5	2.9	6.1	31	. .	612	674	666	. .	91.3	307 33 26.3	. .	− 1 12.5	358 38 35.0	− 1.7
44	310 34	10 0.5	0.5	4.1	11.6	36	. .	. .	. .	823	861	91.3	49 22 49.2	70.4	+ 1 4.9	100 30 15.3	− 2.0
45	307 14	0.0	29.2	3.0	8.2	37	252	374	. .	. .	. .	91.3	52 42 54.4	. .	+ 1 12.5	103 50 28.1	. .
46	307 46	1.7	2.7	5.4	12.8	36	. .	. .	. .	157	243	91.3	52 10 40.4	75.1	+ 1 11.1	103 18 12.7	. .
47	357 4	4.2	3.5	9.1	13.9	31	. .	813	. .	739	. .	91.3	2 51 35.1	69.2	+ 2.8	53 57 59.1	+18.9
48	1 44	6.3	4.4	10.0	15.6	34	803	. .	. .	. .	847	91.3	358 12 23.0	. .	− 1.7	49 18 42.5	+ 3.1
49	73 22	9 26.1	19.5	12.6	21.0	37	718	736	. .	. .	. .	91.3	286 35 3.6	68.8	− 3 4.9	337 38 19.9	+ 2.7
50	350 46	10 16.1	11.9	16.7	25.0	34	. .	826	. .	864	. .	91.3	9 10 31.5	. .	+ 9.0	60 17 1.7	+ 1.1

No.	Barom.	At. Ther.
	in.	°
12	30.10	49.5
15	29.985	69.5
18	29.98	69.0
23	30.00	66.0
28	29.99	63.5
31	29.96	53.0
34	29.95	53.0
42	29.92	59.0
46	29.89	68.8
47	29.83	70.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	° ′ ″
5	− 0.2	. .	. .	− 0.2
12	−15 56.8	+ 16 35.2	. .	+ 0 38.4
16	− 15.1	+ 19.6	. .	+ 4.5
21	− 0.8	+ 7.8	. .	+ 7.0
22	− 0.8	− 7.8	. .	− 8.6
29	−10 36.3	+ 16 6.7	. .	+ 5 30.4
45	− 7.1	− 16 7.6	. .	− 16 14.7
46	− 7.0	+ 16 7.6	. .	+ 16 0.6

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Oct. 29	1	1 Pegasi	S.	1.0	2.7	7.0	9.2	11.3	13.5	15.(	20.0	21.7	17 11.33	− 0.92	−52.91	−52.95	21 16 17.46	− 0.09
	2	1 Draconis, S. P.	S.	. .	. .	29.5	14.8	0.6	45.7	31.8	. .	. .	20 0.48	− 3.85	. .	−52.95	9 19 3.68	− 0.39
	3	β Aquarii	S.	. .	. .	47.8	50.0	52.1	54.2	56.2	. .	. .	25 52.06	− 1.15	−53.00	−52.95	21 24 57.96	+ 0.08
	4	ξ Aquarii	S.	46.8	49.4	50.9	57.1	59.2	1.3	7.6	9.0	11.6	31 59.21	− 1.17	−52.99	−52.95	21 31 5.09	+ 0.05
	5	ε Pegasi, (R.)	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	6	B. A. C. 7851	S.	. .	. .	58.0	23.4	48.9	16.6	. .	. .	. .	23 49.70	+ 4.26	. .	−52.96	22 23 1.00	+ 1.57
	7	ε Piscium	E.	9.0	11.8	13.3	19.5	21.5	23.5	29.7	31.4	34.0	57 21.52	− 1.06	−52.98	−53.02	0 56 27.44	− 0.02
	8	Polaris	E.	. .	. .	4.5	31.0	59.0	25.0	51.0	. .	. .	13 58.10	+15.27	. .	−53.03	1 13 20.34	− 1.44
	9	θ¹ Ceti	E.	28.7	31.3	32.9	39.1	41.2	43.2	49.3	50.9	53.6	18 41.13	− 1.20	−53.10	−53.03	1 17 46.90	+ 0.09
	10	η Piscium	E.	29.2	31.8	33.4	39.7	41.9	44.0	50.3	51.9	54.6	25 41.87	− 1.00	−53.05	−53.03	1 24 47.84	+ 0.09
	11	o Piscium	E.	29.4	32.0	33.6	39.7	41.8	43.9	50.0	51.7	54.3	39 41.82	− 1.05	−52.98	−53.03	1 38 47.74	− 0.08
	12	β Arietis	E.	25.2	27.8	29.5	36.0	38.2	40.5	46.9	48.6	51.3	48 38.22	− 0.95	−52.99	−53.03	1 47 44.24	− 0.02
	13	Neptune	E.	52.0	54.7	56.2	2.5	4.5	6.6	12.8	14.4	16.9	52 4.51	− 1.04	. .	−53.03	1 51 10.44	. .
	14	α Arietis	E.	48.5	51.3	52.9	59.5	1.8	4.0	10.7	12.4	15.1	1 1.80	− 0.93	−53.04	−53.03	2 0 7.84	+ 0.02
	15	ξ¹ Ceti	E.	4.4	7.1	8.6	14.7	16.9	19.0	25.0	26.7	29.3	7 16.86	− 1.05	−53.12	−53.03	2 6 22.78	+ 0.13
	16	α Ceti	E.	. .	. .	35.0	37.0	39.0	41.1	43.3	. .	. .	56 31.08	− 1.09	−53.00	−53.04	2 55 44.94	− 0.03
31	17	α Persei	E.	59.3	3.2	5.7	15.0	18.2	21.5	30 8	33.2	37.0	16 13.21	− 0.27	. .	−53.51	3 15 24.43	− 0.04
	18	γ² Ursæ Minoris, S. P.	E.	30.0	21.4	16.4	56.7	19.8	42.9	23.0	18.0	9.4	21 49.73	− 2.76	. .	−53.51	15 20 53.46	+ 0.01
	19	η Tauri	E.	44.2	47.0	48.7	55.4	57.5	59.7	6.6	8.0	11.0	40 57.57	− 0.68	−53.59	−53.51	3 40 3.38	− 0.01
	20	ζ Persei	E.	56.4	59.3	1.0	8.3	10.7	13.1	20.4	22.1	25.0	47 10.70	− 0.58	−53.47	−53.51	3 46 16.61	− 0.05
	21	γ Tauri	E.	22.4	25.0	26.7	33.0	35.2	37.4	43.6	45.3	47.9	13 35.17	− 0.78	−53.48	−53.51	4 12 40.88	− 0.02
	22	ε Tauri	E.	0.5	3.3	4.8	11.2	13.4	15.5	22.0	23.7	26.4	22 13.42	− 0.74	−53.58	−53.51	4 21 19.17	+ 0.06
	23	α Tauri	E.	26.5	29.1	30.8	37.1	39.3	41.4	47.6	49.4	52.0	29 39.24	− 0.77	−53.54	−53.51	4 28 44.96	+ 0.01
	24	9 Camelopardalis	E.	1.4	7.8	11.5	26.4	31.9	36.8	51.7	55.5	2.0	42 31.67	+ 0.36	. .	−53.51	4 41 38.52	+ 0.14
	25	ι Aurigæ	E.	30.6	33.6	35.5	42.8	45.3	47.7	54.9	56.8	59.8	49 45.22	− 0.56	−53.51	−53.51	4 48 51.15	− 0.04
	26	11 Orionis	E.	7.0	9.7	11.4	17.7	19.8	22.0	28.3	29.9	32.5	58 19.81	− 0.78	−53.48	−53.52	4 57 25.51	− 0.09
	27	ε Ursæ Minoris, S. P.	E.	15.4	56.0	45.0	15.0	0.0	45.0	29.6	. .	. .	59 44.67	− 5.03	. .	−53.52	16 58 46.12	+ 0.05
	28	β Orionis	E.	14.0	16.6	18.2	24.5	26.5	28.6	34.7	36.3	38.8	9 26.47	− 1.01	−53.49	−53.52	5 8 31.94	− 0.03
Nov. 3	29	α Piscis Australis	Sk.	25.8	28.9	30.6	37.6	40.0	42.4	49.3	51.3	54.2	51 40.01	− 1.41	−54.25	−54.17	22 50 44.43	+ 0.12
	30	α Pegasi	Sk.	13.9	16.6	18.2	24.5	26.6	28.8	35.0	36.7	39.2	59 26.61	− 0.84	−54.08	−54.17	22 58 31.60	− 0.06
	31	B. A. C. 7	Sk.	6.3	9.1	17.0	20.8	24.8	28.9	32.6	40.0	43.5	3 24.80	+ 0.10	. .	−54.19	0 2 30.71	− 2.98
	32	γ Pegasi	Sk.	30.1	32.9	34.4	40.8	42.9	44.9	51.3	52.8	55.5	7 42.84	− 0.84	−54.14	−54.19	0 6 47.81	− 0.05
	33	O, 13	Sk.	38.6	41.4	43.1	49.9	52.3	54.6	1.7	3.6	6.7	32 52.43	− 1.38	. .	−54.20	0 31 56.85	− 3.48
	34	β Ceti	Sk.	2.0	4.5	6.2	12.7	14.9	17.0	23.5	25.0	27.8	38 14.84	− 1.24	−54.42	−54.20	0 37 19.40	+ 0.27
	35	Polaris	Sk.	. .	. .	54.0	21.0	44.5	13.0	41.0	. .	. .	13 46.70	+27.86	. .	−54.20	1 13 20.36	− 0.03
	36	Anonymous	Sk.	56.4	58.9	. .	4.2	. .	. .	16.6	18.6	. .	38 8.64	− 0.94	. .	−54.21	1 37 13.49	. .
	37	Neptune	Sk.	21.6	24.3	25.8	32.2	34.2	36.3	42.6	44.0	46.7	51 34.19	− 0.90	. .	−54.21	1 50 39.08	. .
	38	I, 10	Sk.	37.3	40.9	42.6	49.8	52.3	54.9	2.2	4.0	7.0	53 52.33	− 1.47	. .	−54.21	1 52 56.65	− 3.60
	39	α Arietis	Sk.	49.0	52.0	53.7	0.4	2.6	4.8	11.6	13.5	16.2	1 2.64	− 0.73	−54.05	−54.21	2 0 7.70	− 0.15
	40	γ Ceti	Sk.	32.7	35.2	36.8	42.9	44.9	47.0	53.0	54.6	57.3	37 44.93	− 0.98	−54.20	−54.22	2 36 49.73	− 0.02
	41	Diana	Sk.	21.3	24.4	. .	. .	. .	. .	45.3	47.3	50.0	53 35.74	− 0.60	. .	−54.22	2 52 40.92	. .
	42	α Ceti	Sk.	28.0	30.7	32.0	38.2	40.2	42.3	48.4	50.0	52.5	56 40.26	− 0.97	−54.24	−54.22	2 55 45.07	+ 0.04
	43	Pallas	Sk.	50.6	53.7	55.9	2.1	4.4	6.7	13.4	15.1	18.0	1 4.43	− 1.34	. .	−54.22	3 0 8.87	. .
4	44	Sun I, S.	E.	. .	. .	28.7	30.9	33.0	35.0	37.2	. .	. .	38 32.96	− 1.30	. .	−54.66	14 37 37.00	. .
	45	Sun II, N.	E.	34.7	37.4	38.8	45.3	47.5	49.6	55.9	57.6	0.2	40 47.44	− 1.30	. .	−54.66	14 39 51.48	. .
	46	α Coronæ Borealis	E.	. .	. .	12.4	14.8	17.0	19.3	21.5	. .	. .	30 17.00	− 0.79	−54.57	−54.68	15 29 21.53	− 0.11
	47	α¹ Herculis	E.	37.8	40.3	42.0	48.3	51.4	52.5	58.9	0.6	3.0	9 50.42	− 0.95	−54.57	−54.70	17 8 54.77	− 0.11
	48	Venus I, N.	E.	47.0	50.1	51.8	58.8	1.1	3.3	10.5	12.0	15.0	21 1.07	− 1.47	. .	−54.74	17 20 4.86	+ 1.63

1, 2, 31. Bisections at sets B and D.
5. Bisections at wires IV–VII.
6. Bisections at set C.
36. Observed for Melete.
36, 41. Wire A used.
44, 45. Wire B used.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith-Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	340 18	9 29.4	27.8	29.3	6.1	30	083	. .	. .	. .	105	91.3	19 37 2.1	68.7	+ 19.9	70 43 43.2	+ 0.9
2	59 8	29.6	25.8	2.1	7.0	32	372	482	. .	. .	. .	91.3	300 47 37.7	69.0	− 1 33.3	351 52 25.6	− 1.3
3	314 56	10 12.9	7.9	12.0	21.0	33	. .	. .	. .	110	070	91.3	45 0 1.0	. .	+ 55.8	96 7 18.0	+ 1.1
4	312 38	0.8	27.1	1.2	8.6	32	. .	063	. .	037	. .	91.3	47 17 33.2	. .	+ 1 0.4	98 24 54.8	− 0.5
5	209 32	10.4	6.6	10.6	15.8	37	. .	324	311	268	294	91.3	150 25 2.7	68.0	− 31.7	80 41 50.2	+ 0.2
6	46 30	9 27.9	23.8	28.8	4.7	33	238	. .	202	. .	190	91.3	313 25 48.0	67.3	− 59.1	4 31 10.1	+26.3
7	328 16	10 9.5	3.6	10.5	16.2	33	. .	320	. .	290	. .	89.9	31 39 59.2	. .	+ 34.6	82 46 55.0	− 1.7
8	49 40	9 20.1	9.5	3.8	13.5	34	570	. .	640	. .	540	89.9	310 16 5.7	66.5	− 1 6.1	1 21 20.8	− 2.3
9	312 14	28.0	20.9	6.9	17.8	34	. .	. .	. .	920	905	89.9	47 42 17.4	. .	+ 1 1.6	98 49 40.2	− 0.9
10	335 44	10 6.5	2.3	6.7	13.7	29	. .	915	. .	880	. .	89.9	24 11 4.4	. .	+ 25.2	75 17 50.8	− 0.9
11	329 34	2.9	29.8	3.3	11.3	31	. .	085	. .	065	. .	89.9	30 21 19.4	. .	+ 32.8	81 28 13.4	− 0.8
12	341 14	1.2	25.3	29.6	7.0	31	. .	850	. .	830	. .	89.9	18 41 27.6	. .	+ 19.0	69 48 7.8	0.0
13	330 34	5.5	0.9	5.5	14.9	36	. .	520	. .	425	. .	89.9	29 22 44.4	. .	+ 31.6	80 29 37.2	. .
14	343 54	2.5	28.0	3.5	8.8	29	. .	960	. .	960	. .	89.9	16 1 1.3	. .	+ 16.1	67 7 38.6	− 2.0
15	329 18	7.4	3.9	9.8	17.5	31	. .	040	. .	020	. .	89.9	30 37 24.0	. .	+ 33.2	81 44 18.4	− 2.6
16	324 38	8.1	3.7	9.0	15.7	29	. .	325	. .	250	. .	89.9	35 16 56.8	66.5	+ 39.7	86 23 57.7	− 2.1
17	10 26	9 29.0	22.8	2.3	8.1	29	. .	330	. .	355	. .	94.6	349 28 54.1	. .	− 11.2	40 35 4.1	− 1.0
18	68 44	24.5	18.2	26.5	2.8	37	. .	945	. .	910	. .	94.6	291 12 59.2	35.0	− 2 34.2	342 16 46.2	− 1.0
19	344 46	10 2.7	25.3	1.5	8.5	34	. .	460	. .	370	. .	94.6	15 10 13.0	. .	+ 16.4	66 16 50.6	− 2.5
20	352 34	0.0	24.4	1.4	7.8	36	. .	665	. .	660	. .	94.6	7 22 46.4	. .	+ 7.8	55 29 15.4	− 0.8
21	336 22	9 26.0	20.2	26.7	4.6	32	. .	340	. .	250	. .	94.6	23 33 35.4	. .	+ 26.3	74 40 22.9	− 1.5
22	339 56	10 0.8	25.6	1.7	8.0	29	. .	800	. .	780	. .	94.6	19 59 1.7	. .	+ 21.9	71 5 44.8	− 1.3
23	337 18	4.3	26.5	4.8	12.4	32	. .	230	. .	210	. .	94.6	22 37 41.9	. .	+ 25.2	73 44 28.3	+ 0.1
24	27 10	9 25.3	19.0	26.2	2.1	36	. .	090	. .	075	. .	94.6	332 46 32.8	. .	− 31.0	23 52 23.0	− 0.2
25	354 0	17.8	10.3	20.0	26.2	32	. .	445	. .	395	. .	94.6	5 55 29.1	. .	+ 6.3	57 1 56.6	+ 0.5
26	336 16	10 0.5	24.6	1.3	7.9	31	045	010	. .	. .	. .	94.6	23 39 19.9	. .	+ 26.4	74 46 7.5	− 1.2
27	58 46	1.5	25.3	1.5	9.8	32	610	. .	565	. .	. .	94.6	301 9 44.5	. .	− 1 39.5	352 14 26.2	− 1.8
28	312 42	9 26.9	21.4	28.3	6.7	30	. .	580	. .	510	. .	94.6	47 13 10.0	34.0	+ 1 5.2	98 20 36.4	− 0.6
29	290 48	10 10.2	2.0	10.1	17.0	34	. .	280	. .	180	. .	93.1	69 8 16.2	. .	+ 2 37.0	120 17 14.4	0.0
30	335 34	1.1	24.0	1.5	9.9	30	. .	410	. .	310	. .	93.1	24 21 9.0	38.9	+ 27.3	75 27 57.5	− 0.7
31	19 30	9 24.8	19.6	28.1	3.1	34	880	. .	. .	. .	838	93.1	340 26 12.8	. .	− 21.5	31 32 12.5	+28.1
32	335 32	29.6	22.3	29.5	6.8	33	. .	105	. .	059	. .	93.1	24 23 48.7	. .	+ 27.4	75 30 37.3	− 0.4
33	292 46	10 0.1	23.3	29,9	7.0	33	. .	. .	. .	272	190	93.1	67 9 51.4	. .	+ 2 22.8	118 18 35.4	+14.4
34	302 24	9 26.5	20.0	26.7	5.6	35	778	850	. .	. .	. .	93.1	57 32 27.5	. .	+ 1 34.8	108 40 23.5	− 2.0
35	49 40	10 1.7	24.0	0.9	7.0	34	340	. .	312	. .	320	93.1	310 16 9.2	. .	− 1 11.4	1 21 19.0	− 2.1
36	327 2	9 29.8	24.5	0.0	7.6	40	. .	. .	. .	918	015	93.1	32 53 17.4	. .	+ 39.2	84 0 17.8	. .
37	330 30	22.3	15.0	22.3	0.5	32	560	550	. .	. .	. .	93.1	29 25 33.2	. .	+ 34.2	80 32 23.6	. .
38	287 24	10 2.0	24.2	2.2	9.9	29	. .	640	. .	572	. .	93.1	72 30 57.7	. .	+ 3 10.2	123 40 29.1	+17.9
39	343 54	9 29.5	23.6	29.3	6.3	29	. .	930	. .	868	. .	93.1	16 1 0.1	. .	+ 17.4	67 7 38.7	− 1.5
40	323 46	10 0.8	23.7	1.5	9.6	34	. .	820	. .	858	. .	93.1	36 10 17.3	. .	+ 44.4	87 17 22.9	− 2.1
41	352 10	9 24.8	19.6	25.6	2.7	34	340	020	. .	. .	. .	93.1	7 43 28.5	. .	+ 8.2	58 49 57.9	− 0.8
42	324 38	10 6.0	28.3	4.0	12.9	29	090	010	. .	. .	. .	93.1	35 16 52.2	. .	+ 43.0	86 23 56.4	− 3.6
43	295 32	9 27.6	21.2	26.5	6.5	22	. .	712	. .	822	. .	93.1	64 21 8.9	34.9	+ 2 6.0	115 29 36.1	− 4.8
44	305 18	22.8	16.5	25.2	6.6	23	050	080	. .	. .	. .	92.2	54 37 43.6	. .	+ 1 21.8	105 45 25.6	. .
45	305 50	17.2	12.8	19.0	0.7	22	. .	. .	. .	230	370	92.2	54 5 25.8	54.8	+ 1 20.2	105 13 7.2	. .
46	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. . .	. .	. .		. .
47	335 34	22.0	19.7	28.8	2.0	30	. .	. .	. .	690	770	92.2	24 21 8.2	. .	+ 26.0	75 27 55.4	+ 2.0
48	293 0	19.7	16.5	24.0	27.5	34	095	. .	. .	. .	045	92.2	66 55 54.7	. .	+ 2 14.2	118 4 30.1	. .

No.	Barom.	At. Ther.
	in.	°
6	29.83	67.0
8	29.83	66.5
16	29.83	66.3
18	30.08	38.0
28	30.07	36.5
30	30.33	41.6
43	30.31	39.0
45	30.22	46.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
13	− 0.2	. .	. .	− 0.2
37	− 0.2	. .	. .	− 0.2
44	− 7.3	− 16 9.6	. .	− 16 16.9
45	− 7.2	+ 16 9.6	. .	+ 16 2.4
48	− 20.1	+ 19.7	. .	− 0.4

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Nov. 4	1	Venus S.	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .
	2	β Draconis	E.	9.4	13.5	15.9	26.0	29.4	32.8	42.7	45.2	49.4	28 29.37	− 0.30	. .	−54.74	17 27 34.33	− 0.10
	3	π Capricorni.	E.	51.9	54.6	56.1	2.5	4.7	6.9	13.4	15.0	17.6	21 4.74	− 1.29	−54.81	−54.75	20 20 8.70	+ 0.09
	4	ε Delphini	E.	56.5	59.2	0.8	6.9	9.0	11.1	17.3	18.9	21.4	28 9.01	− 0.93	−54.80	−54.76	20 27 13.32	+ 0.09
	5	B. A. C. 7169	E.	. .	. .	2.3	15.0	28.8	41.6	55.0	. .	. .	35 28.54	+ 3.11	. .	−54.76	20 34 36.89	+ 5.45
	6	B. A. C. 7178	E.	. .	. .	23.4	36.7	50.2	2.7	16.0	. .	. .	36 49.80	+ 3.11	. .	−54.76	20 35 58.15	+ 5.45
	7	Saturn I, N.	E.	54.0	56.7	58.3	. .	. .	. .	15.8	17.3	20.0	44 7.02	− 1.30	. .	−54.76	20 43 10.96	. .
	8	Saturn II, S.	E.	. .	. .	4.0	6.2	8.4	10.6	12.7	. .	. .	44 8.38	− 1.30	. .	−54.76	20 43 12.32	. .
	9	B. A. C. 7241	E.	. .	. .	. .	. .	35.4	38.2	44.0	46.0	49.0	46 32.62	− 0.42	. .	−54.76	20 45 37.41	− 0.96
	10	ν Cygni	E.	8.8	12.1	14.0	22.3	25.0	27.7	35.7	37.9	41.3	53 24.98	− 0.48	−54.77	−54.77	20 52 29.73	+ 0.06
	11	σ^2 Ursæ Majoris, S. P.	E.	50.8	44.0	40.0	23.9	18.2	12.7	57.3	53.0	46.1	0 18.44	− 2.61	. .	−54.77	8 59 21.06	− 0.18
	12	61^1 Cygni	E.	. .	. .	6.6	9.2	11.8	14.5	17.0	. .	. .	2 11.82	− 0.53	−54.72	−54.77	21 1 16.52	− 0.09
	13	61^2 Cygni	E.	. .	. .	8.1	10.7	13.4	15.9	18.6	. .	. .	2 13.34	− 0.53	. .	−54.77	21 1 18.04	+ 1.43
	14	ζ Cygni	E.	17.1	20.1	22.0	29.0	31.4	33.8	40.8	42.5	45.4	8 31.34	− 0.67	−54.69	−54.77	21 7 35.90	− 0.07
	15	α Cephei	E.	. .	. .	20.4	24.7	29.3	33.5	38.0	. .	. .	16 29.18	+ 0.20	. .	−54.77	21 15 34.61	− 0.03
	16	β Aquarii	E.	41.4	43.9	45.5	51.7	53.8	55.8	2.0	3.5	6.0	25 53.73	− 1.13	−54.76	−54.77	21 24 57.83	+ 0.02
	17	β Cephei (R.)	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	18	ιι Cephei (R.)	E.	18.6	27.3	30.9	49.6	56.2	2.3	20.7	25.2	32.9	40 55.97	+ 2.74	. .	−54.78	21 40 3.93	− 0.25
	19	μ Capricorni.	E.	11.4	14.1	15.7	22.1	24.1	26.2	32.5	34.0	36.8	47 24.09	− 1.23	−54.70	−54.78	21 46 28.08	− 0.01
	20	79 Draconis	E.	29.1	38.4	43.9	4.7	11.6	18.9	39.7	45.0	53.4	52 11.63	+ 1.12	. .	−54.78	21 51 17.97	+ 0.10
	21	α Aquarii	E.	4.7	7.3	8.9	15.0	17.0	19.0	25.2	26.8	29.4	0 17.05	− 1.07	−54.83	−54.78	22 0 21.18	+ 0.08
	22	B. A. C. 7708	E.	. .	. .	3.2	7.3	11.8	16.2	20.5	. .	. .	2 11.80	+ 0.18	. .	−54.78	22 1 17.20	− 1.07
	23	B. A. C. 7736^1	E.	. .	. .	8.0	12.2	15.7	20.0	24.0	. .	. .	5 15.98	+ 0.04	. .	−54.78	22 4 21.24	− 1.25
	24	B. A. C. 7736^2	E.	. .	. .	9.8	13.9	17.8	21.7	25.9	. .	. .	5 17.82	+ 0.04	. .	−54.78	22 4 23.08	− 1.25
	25	B. A. C. 7755	E.	. .	. .	2.4	6.2	10.2	14.2	18.2	. .	. .	8 16.24	+ 0.05	. .	−54.78	22 7 15.51	− 1.28
	26	9 Draconis, S. P.	E.	13.0	2.0	55.5	30.1	21.0	12.4	46.0	39.7	29.4	25 21.01	− 3.73	. .	−54.79	10 24 22.49	+ 0.11
	27	η Aquarii	E.	39.1	41.7	43.3	49.4	51.5	53.5	59.5	1.0	3.7	29 51.41	− 1.07	−54.89	−54.79	22 28 55.55	+ 0.13
	28	B. A. C. 7893	E.	31.8	34.5	36.2	42.6	44.9	47.0	53.5	55.0	57.8	33 44.81	− 0.83	. .	−54.79	22 32 49.19	− 2.31
	29	ζ Pegasi	E.	56.6	59.2	0.8	7.0	9.0	11.0	17.3	18.9	21.6	36 9.04	− 0.91	−54.97	−54.79	22 35 13.31	+ 0.24
	30	B. A. C. 7937	E.	5.6	8.3	10.0	16.5	18.6	20.8	27.2	28.8	31.5	40 18.59	− 0.85	. .	−54.79	22 39 22.97	− 2.36
	31	B. A. C. 7943	E.	9.6	12.2	13.8	20.0	22.2	24.2	30.6	32.0	34.7	41 22.14	− 0.92	. .	−54.79	22 40 26.43	− 2.46
	32	ω Piscium	E.	36.8	39.5	41.0	47.2	49.3	51.3	57.5	59.0	1.7	53 49.26	− 0.99	−54.84	−54.81	23 52 53.46	+ 0.04
	33	α Andromedæ	E.	. .	. .	46.3	18.6	51.0	53.3	55.7	. .	. .	2 50.98	− 0.69	−54.79	−54.82	0 1 55.47	− 0.01
	34	B. A. C. 7	E.	. .	. .	21.8	25.7	29.6	33.4	41.2	44.2	49.0	3 25.65	+ 0.03	. .	−54.82	0 2 30.86	− 2.66
	35	γ Pegasi	E.	30.8	33.5	35.0	41.5	43.5	45.6	52.0	53.5	56.2	7 43.51	− 0.88	−54.77	−54.82	0 6 47.81	− 0.05
	36	κ Draconis, S. P.	E.	39.8	31.9	27.5	9.3	3.4	57.2	38.6	33.9	26.3	29 3.10	− 2.88	. .	−54.82	12 28 5.40	− 0.52
	37	O, 13	E.	39.2	42.0	43.8	50.9	53.0	55.5	2.4	4.0	7.0	32 53.09	− 1.43	. .	−54.82	0 31 56.84	− 3.47
	38	π Cassiopeæ	E.	. .	16.6	20.0	27.4	. .	34.8	. .	42.0	. .	34 20.15	− 0.07	. .	−54.83	0 33 25.25	− 0.16
	39	β Ceti	E.	2.4	5.0	6.6	13.2	15.3	17.4	23.9	25.5	28.2	38 15.28	− 1.29	−54.82	−54.83	0 37 19.16	+ 0.01
	40	ε Piscium	E.	13.6	15.0	19.0	21.1	23.2	25.4	27.4	31.5	33.0	57 23.24	− 0.97	−54.79	−54.83	0 56 27.44	− 0.02
	41	Polaris	E.	. .	. .	53.0	21.0	48.5	15.5	41.0	. .	. .	13 47.80	+26.57	. .	−54.83	1 13 19.54	− 0.52
	42	θ^1 Ceti	E.	30.6	33.1	34.6	40.8	42.9	45.0	51.3	52.9	55.4	18 42.96	− 1.15	−54.97	−54.83	1 17 46.98	+ 0.16
	43	η Piscium	E.	30.9	33.5	35.0	41.4	43.5	45.7	52.0	53.6	56.3	25 43.54	− 0.88	−54.82	−54.83	1 24 47.83	+ 0.06
	44	Melete	E.	49.6	52.5	53.9	59.8	2.0	4.2	20.6	22.0	24.4	38 2.11	− 0.99	. .	−54.84	1 37 6.28	. .
	45	Vala	E.	14.0	16.5	18.5	24.3	26.4	28.5	34.6	35.9	38.6	44 26.37	− 0.96	. .	−54.84	1 43 30.55	. .
	46	β Arietis	E.	. .	35.5	. .	39.9	42.2	44.4	48.7	50.4	53.0	48 39.98	− 0.81	−54.85	−54.85	1 47 44.32	+ 0.02
	47	Neptune	E.	. .	24.5	. .	28.6	. .	32.8	37.0	38.6	41.0	51 28.66	− 0.95	. .	−54.85	1 50 32.86	. .
	48	α Arietis	E.	50.0	52.9	54.6	1.3	3.5	5.7	12.3	14.0	16.8	1 3.46	− 0.77	−54.83	−54.85	2 0 7.84	− 0.01
5	49	β Leonis	S.	. .	. .	. .	. .	. .	39.8	41.0	45.6	48.3	43 35.56	− 0.97	−55.34	−55.39	11 42 39.20	− 0.07
	50	Polaris, S. P.	S.	. .	. .	34.5	6.0	41.5	14.0	16.0	. .	. .	14 40.40	−25.78	. .	−55.41	1 13 19.21	− 0.42

2. Telescope micrometer reading increased one revolution in reduction.
5, 15, 20, 26, 36. Bisections at sets B and D.
6. Bisections at set C.
25. Bisections at wires V and VI.
44, 45. Wire A used.

Number.	Circle Division	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	293 0	9 19.7	16.5	24.0	27.5	36	. .	615	. .	605	. .	92.2	66 56 33.8	. .	+ 2 14.2	118 5 9.2	. .
2	13 26	27.8	26.1	6.2	6.5	33	000	955	. .	. .	. .	92.2	346 30 3.8	62.0	— 13.8	37 36 11.2	— 2.8
3	302 26	29.9	26.8	3.5	9.3	31	. .	600	. .	625	. .	92.6	57 29 28.2	. .	+ 1 31.3	108 37 20.7	— 0.7
4	331 56	10 0.5	26.0	3.7	8.3	35	. .	000	. .	975	. .	92.6	28 0 19.9	53.9	+ 31.1	79 7 12.2	— 1.2
5	42 2	9 25.7	21.3	28.7	3.5	33	250	. .	. .	. .	270	92.6	317 53 49.1	. .	— 52.8	8 59 17.5	+22.1
6	42 2	25.7	21.3	28.7	3.5	36	840	. .	. .	. .	870	92.6	317 54 43.6	. .	— 52.7	9 0 12.1	+22.1
7	301 58	10 3.4	28.8	6.5	12.6	37	850	. .	. .	. .	855	92.6	57 59 6.6	. .	+ 1 33.3	109 7 1.1	. .
8	301 58	3.4	28.8	6.5	12.6	38	. .	850	. .	810	. .	92.6	57 59 21.7	. .	+ 1 33.3	109 7 26.2	. .
9	4 38	5.8	2.9	11.3	14.2	34	. .	. .	. .	070	095	92.6	355 18 13.2	. .	— 4.8	46 24 29.6	+20.5
10	1 44	1.6	27.8	5.3	9.3	34	. .	950	. .	915	. .	92.6	358 12 20.6	. .	— 1.8	49 18 40.0	+ 0.5
11	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. . .	. .		. .
12	359 10	9 26.7	23.2	28.8	6.0	31	. .	. .	. .	420	370	92.6	0 45 22.1	. .	+ 0.8	51 51 44.1	— 0.9
13	359 10	9 26.7	23.2	28.8	6.0	31	. .	. .	. .	910	915	92.6	0 45 30.0	. .	+ 0.8	51 51 52.0	+ 7.0
14	350 46	10 5.0	0.5	5.5	11.0	35	. .	375	. .	350	. .	92.6	9 10 29.1	. .	+ 9.5	60 16 59.8	— 0.8
15	23 6	6.0	1.6	9.0	13.1	35	145	. .	. .	. .	130	92.6	336 50 27.6	. .	— 25.1	27 56 23.7	— 5.1
16	314 56	3.2	29.3	5.5	9.5	33	310	255	. .	. .	. .	92.6	44 59 55.5	. .	+ 58.7	96 7 15.4	— 1.7
17	148 50	20.7	14.8	24.8	2.5	36	. .	. .	. .	185	260	92.6	211 6 28.7	. .	+ 35.4	19 59 17.1	+ 9.7
18	148 6	1.8	27.1	8.8	15.7	33	. .	780	. .	755	. .	92.6	211 50 3.9	. .	+ 36.5	19 15 40.8	— 0.2
19	306 56	9 29.4	24.7	3.0	11.3	36	. .	915	. .	875	. .	92.6	53 0 48.9	. .	+ 1 18.0	104 8 28.1	0.0
20	34 8	10 8.5	1.5	9.5	13.8	31	095	. .	. .	. .	100	92.6	325 47 26.7	. .	— 40.0	16 53 7.9	— 2.9
21	320 8	4.8	29.3	7.5	15.5	35	. .	040	. .	020	. .	92.6	39 48 25.1	. .	+ 49.1	90 55 35.4	— 2.7
22	22 42	9 28.8	25.2	3.6	4.5	31	. .	890	. .	920	. .	92.6	337 13 31.6	. .	— 24.8	28 19 28.0	+27.0
23	19 42	29.7	25.5	2.3	6.9	29	. .	500	. .	485	. .	92.6	340 12 55.2	. .	— 21.2	31 18 55.2	+27.0
24	19 42	29.7	25.5	2.3	6.9	30	. .	570	. .	540	. .	92.6	340 13 11.4	. .	— 21.2	31 19 11.4	+27.0
25	19 50	24.5	20.3	28.4	2.0	33	. .	. .	. .	720	740	92.6	340 5 55.3	. .	— 21.2	31 11 55.3	+27.1
26	64 38	10 7.4	1.2	8.6	13.2	29	175	. .	. .	. .	135	92.6	295 16 55.6	. .	— 2 4.5	346 21 12.3	+ 0.3
27	320 18	5.0	29.7	6.5	14.7	35	. .	475	. .	435	. .	92.6	39 38 31.3	. .	+ 49.0	90 45 41.5	— 1.5
28	339 56	3.0	28.5	3.5	11.2	36	. .	105	. .	135	. .	92.6	26 0 39.2	. .	+ 21.5	71 7 21.9	+20.9
29	331 14	9 29.5	24.3	2.5	9.7	34	. .	960	. .	985	. .	92.6	28 42 19.0	. .	+ 32.4	79 49 12.6	— 0.5
30	339 46	10 4.5	0.0	4.9	13.9	36	290	330	. .	. .	. .	92.6	20 10 43.6	. .	+ 21.7	71 17 26.5	+21.2
31	332 34	9 29.8	25.8	1.3	7.0	30	. .	435	. .	445	. .	92.6	27 21 9.1	. .	+ 30.6	78 28 0.9	+19.3
32	327 14	27.3	23.3	0.0	8.0	36	. .	555	. .	545	. .	92.6	32 42 41.3	43.5	+ 38.3	83 49 40.8	— 1.2
33	349 26	10 2.5	27.6	3.0	9.6	30	960	035	. .	. .	. .	92.6	10 29 19.8	. .	+ 11.0	61 35 52.0	— 1.0
34	19 30	9 23.0	17.3	26.0	0.7	34	. .	. .	. .	975	960	92.6	340 26 12.8	. .	— 21.2	31 32 12.8	+28.4
35	335 32	29.5	24.0	0.0	7.3	33	. .	025	. .	020	. .	92.6	24 23 47.9	. .	+ 27.0	75 30 36.1	— 1.5
36	70 30	26.8	20.8	28.0	4.5	30	150	. .	. .	. .	045	92.6	289 25 0.1	. .	— 2 47.8	330 28 33.5	+ 0.4
37	292 46	10 6.7	29.8	7.3	15.1	33	. .	140	. .	120	. .	92.6	67 9 56.3	. .	+ 2 20.8	118 18 38.3	+14.2
38	16 52	0.0	24.7	2.2	5.7	28	. .	. .	. .	700	640	92.6	343 2 42.7	. .	— 18.2	34 8 45.7	— 1.5
39	302 24	1.0	24.6	2.2	11.4	35	. .	650	. .	585	. .	92.6	57 32 29.5	. .	+ 1 33.6	108 40 24.3	— 1.4
40	328 16	4.3	29.8	6.0	12.5	33	. .	205	. .	155	. .	92.6	31 39 55.7	. .	+ 36.8	82 46 53.7	— 3.0
41	49 40	9 24.8	18.5	23.0	28.8	34	700	. .	750	. .	690	92.6	310 16 7.5	. .	— 1 10.5	1 21 18.2	— 2.6
42	312 14	10 6.3	29.0	6.6	12.1	34	. .	390	. .	355	. .	92.6	47 42 14.2	. .	+ 1 5.6	98 49 41.0	— 0.7
43	335 44	1.3	25.8	3.0	11.3	29	. .	900	. .	870	. .	92.6	24 11 2.5	. .	+ 26.8	75 17 50.5	— 1.0
44	326 54	2.9	26.5	2.7	10.0	29	. .	040	. .	800	. .	92.6	32 58 14.7	. .	+ 38.8	84 5 14.7	— 3.1
45	327 28	5.2	0.0	5.3	12.0	31	. .	925	. .	865	. .	92.6	32 25 2.9	. .	+ 38.0	83 32 2.1	— 3.0
46	341 14	3.0	25.6	1.9	9.3	31	. .	300	. .	290	. .	92.6	18 41 23.7	42.0	+ 20.2	69 48 5.1	— 2.3
47	330 30	4.3	26.8	4.5	9.8	34	. .	040	. .	085	. .	92.6	29 26 7.4	. .	+ 52.8	80 33 2.4	. .
48	343 54	3.1	28.5	4.5	9.3	29	. .	700	. .	670	. .	92.6	16 1 0.5	. .	+ 17.2	67 7 38.9	— 1.2
49	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
50	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		68.8	. .		. .

No.	Barom.	At. Ther.
	in.	°
2	30.30	58.0
4	30.29	55.0
32	30.28	47.5
46	30.28	45.5
50	30.33	61.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination	Sum.
	′ ″	′ ″	′ ″	′ ″
1	— 20.1	— 19.7	+ 0.3	— 39.5
7	— 0.8	+ 12.6	. .	+ 11.8
8	— 0.8	— 12.6	. .	— 13.4
47	— 0.2	. .	. .	— 0.2

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Nov. 6	1	Sun II, S.	S.	33.4	36.2	37.8	44.0	46.2	48.5	54.8	56.5	59.1	48 46.28	− 1.35	. .	−55.44	14 47 49.49	−67.57
	2	Saturn I, N.	S.	. .	. .	. .	25.1	27.3	29.6	31.8	. .	. .	44 27.36	− 1.28	. .	−55.50	20 43 30.58	. .
	3	Saturn II, S.	S.	. .	. .	. .	. .	. .	34.5	38.7	40.4	43.0	44 30.09	− 1.28	. .	−55.50	20 43 33.31	. .
	4	σ^2 Ursæ Majoris, S. P.	S.	52.7	48.6	37.7	32.3	26.9	21.6	16.4	5.2	1.8	59 27.02	. .	. .	. .		. .
	5	ζ Cygni	S.	18.2	21.2	23.0	30.0	32.3	34.6	41.7	43.5	46.5	8 32.33	− 0.69	−55.70	−55.50	21 7 36.14	+ 0.21
	6	α Cephei	S.	3.8	9.2	12.4	25.6	30.1	34.4	47.5	50.7	56.4	16 30.01	+ 0.19	. .	−55.50	21 15 34.70	+ 0.15
	7	β Aquarii	S.	42.2	44.7	46.2	52.4	54.5	56.6	2.7	4.2	6.8	25 54.48	− 1.15	−55.52	−55.50	21 24 57.83	+ 0.05
	8	ξ Aquarii	S.	49.3	51.6	53.3	59.6	1.7	3.8	40.0	41.5	44.0	32 1.64	− 1.16	−55.51	−55.50	21 31 4.96	+ 0.03
	9	ϵ Pegasi	S.	46.2	48.6	50.1	56.4	58.5	0.6	6.7	8.3	10.9	38 58.48	− 0.96	−55.54	−55.51	21 38 2.01	+ 0.04
	10	79 Draconis (R.)	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	11	Groom. 1620, S. P.	S.	. .	. .	15.0	52.7	28.2	5.8	44.5	. .	. .	10 29.24	− 8.34	. .	−55.51	10 9 25.39	− 8.38
	12	B. A. C. 7851	S.	. .	. .	. .	45.9	11.9	38.9	30.2	50.7	21.7	23 46.53	+ 7.24	. .	−55.51	22 22 58.26	+ 3.63
	13	ϵ Piscium	S.	11.4	14.1	15.6	22.0	24.0	26.0	32.1	33.7	36.4	57 23.92	− 0.99	−55.45	−55.54	0 56 27.39	− 0.07
	14	η Piscium	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	15	Melete	S.	26.4	29.2	30.7	35.0	. .	. .	47.0	. .	. .	36 38.91	− 1.01	. .	−55.55	1 35 42.35	. .
	16	Neptune	S.	4.8	7.2	8.8	15.0	17.1	19.3	25.3	27.0	29.5	51 17.11	− 0.96	. .	−55.56	1 50 20.59	. .
	17	α Arietis	S.	50.9	53.5	55.3	2.0	4.2	6.3	13.0	14.6	17.4	1 4.13	− 0.78	−55.47	−55.56	2 0 7.79	− 0.08
	18	ξ^1 Ceti	S.	6.9	9.5	11.0	17.3	19.3	21.2	27.5	29.1	31.6	7 19.27	− 0.98	−55.55	−55.56	2 6 22.73	+ 0.03
	19	ι Cassiopeæ	S.	. .	. .	38.2	43.1	48.4	53.7	4.5	8.0	14.5	19 43.30	+ 0.49	. .	−55.56	2 18 48.23	+ 0.25
	20	5 Ursæ Minoris, S. P.	S.	36.0	25.4	19.5	53.2	44.6	35.9	10.6	3.9	53.6	28 44.74	− 3.70	. .	−55.56	14 27 45.48	+ 0.25
	21	γ Ceti	S.	34.2	36.8	38.2	44.4	46.4	48.4	54.5	56.2	58.7	37 46.42	− 1.04	−55.60	−55.57	2 36 49.71	− 0.07
	22	Diana	S.	5.9	9.0	10.6	18.0	20.3	22.8	29.9	31.5	34.7	50 20.30	− 0.66	. .	−55.57	2 49 24.07	. .
	23	Anonymous	S.	14.8	17.6	18.9	25.4	27.7	29.9	36.4	38.1	41.0	58 27.76	− 0.80	. .	−55.57	2 57 31.39	. .
	24	12 Canum Venat.	Sk.	. .	59.8	2.4	4.9	7.6	10.2	15.3	17.3	20.6	51 4.91	− 0.60	−55.48	−55.42	12 50 8.89	+ 0.06
	25	Polaris, S. P.	Sk.	. .	. .	36.5	7.0	42.0	15.0	48.0	. .	. .	14 41.70	−29.68	. .	−55.43	1 13 16.59	− 2.80
	26	α Virginis	Sk.	. .	. .	. .	31.0	33.1	35.2	39.3	40.9	43.5	19 31.02	− 1.30	−55.42	−55.43	13 18 34.29	− 0.03
	27	ζ Virginis	Sk.	1.7	4.3	5.8	11.9	14.0	16.0	22.0	23.6	26.2	29 13.94	− 1.17	−55.43	−55.43	13 28 17.31	0.00
	28	η Ursæ Majoris (R.)	Sk.	. .	. .	23.2	26.0	29.7	32.7	35.7	. .	. .	43 29.56	+ 0.97	. .	−55.43	13 42 35.16	+ 0.36
7	29	Sun I, S.	Sk.	18.6	21.4	. .	27.3	31.4	35.6	. .	41.3	44.3	50 31.41	− 1.35	. .	−55.44	14 59 34.59	. .
	30	Sun II, N.	Sk.	33.9	36.6	38.0	44.4	46.5	48.8	55.1	56.8	59.5	52 46.62	− 1.38	. .	−55.44	14 51 49.80	. .
	31	α Scorpii	Sk.	. .	. .	34.6	36.8	39.0	41.4	13.7	. .	. .	22 39.10	− 1.53	−55.50	−55.45	16 21 42.12	+ 0.04
	32	ζ Ophiuchi	Sk.	1.3	2.9	7.0	9.1	11.3	13.4	15.5	19.5	21.0	31 11.22	− 1.50	−55.64	−55.46	16 30 14.46	+ 0.18
	33	η Herculis	Sk.	15.0	18.3	20.2	28.0	30.7	33.4	41.0	43.2	46.6	39 30.71	− 0.60	−55.51	−55.46	16 38 34.05	+ 0.06
	34	κ Ophiuchi	Sk.	. .	. .	. .	. .	. .	. .	18.0	49.5	52.0	52 39.65	− 1.05	−55.56	−55.46	16 51 43.14	+ 0.14
	35	Venus I, S.	Sk.	36.1	39.0	40.7	47.7	50.0	52.3	59.0	1.0	3.9	26 49.97	− 1.55	. .	−55.46	17 25 52.96	+ 1.71
	36	Venus I, N.	Sk.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	37	γ Cephei (R.)	Sk.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	38	ω Piscium (R.)	Sk.	. .	. .	45.2	47.0	49.4	51.4	53.4	. .	. .	53 49.28	− 0.35	. .	−55.52	23 52 53.41	+ 0.01
	39	α Andromedæ	Sk.	37.4	40.6	42.5	49.4	51.7	54.1	1.0	2.7	5.5	2 51.66	− 0.77	−55.41	−55.42	0 1 55.47	+ 0.01
	40	γ Pegasi	Sk.	31.3	34.2	35.7	42.3	44.3	46.3	52.6	54.3	56.9	7 44.21	− 0.97	−55.40	−55.42	0 6 47.82	− 0.02
	41	β Ceti	Sk.	3.0	5.7	7.5	14.0	16.0	18.2	24.4	26.2	28.8	38 15 98	− 1.39	−55.43	−55.43	0 37 19.16	+ 0.05
	42	B. A. C. 262	Sk.	. .	. .	0.0	27.5	54.5	20.0	47.0	. .	. .	52 53.80	+ 7.92	. .	−55.43	0 52 6.29	−11.74
	43	Polaris	Sk.	. .	. .	52.0	18.5	42.0	11.0	35.0	. .	. .	13 43.70	+28.37	. .	−55.43	1 13 16.64	− 2.64
	44	Melete	Sk.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	45	Vala	Sk.	. .	21.2	23.0	27.3	33.3	39.4	13.6	. .	. .	41 31.22	− 1.08	. .	−55.44	1 40 34.70	. .
	46	Neptune	Sk.	58.7	1.4	2.9	9.1	11.1	13.1	19.4	21.0	23.4	51 11.12	− 1.04	. .	−55.44	1 50 14.64	. .
	47	α Arietis	Sk.	51.0	53.8	55.5	2.0	4.2	6.4	13.0	14.7	17.5	1 4.23	− 0.85	−55.50	−55.44	2 0 7.94	+ 0.07
	48	γ Ceti	Sk.	34.0	36.5	38.0	44.4	46.4	48.5	54.7	56.2	58.7	37 46.38	− 1.12	−55.47	−55.45	2 36 49.81	+ 0.02
	49	Anonymous	Sk.	51.9	57.0	1.5	3.8	6.3	9.0	11.0	16.1	20.9	49 6.39	− 1.13	. . .	−55.45	2 48 9.81	. .
	50	Hygeia	Sk.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .

4, 11. Probably not the star; observation rejected.
10. Bisections at wires II–VI.
12. Bisections at set C.
19, 20, 22, 42. Bisections at sets B and D.
23. Observed for Iphigenia.
23, 44, 45, 49, 50. Wire A used.
32. From this observation microscope readings very discordant.
37. Bisections at wires V–VII.
49. Observed for Diana.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	304 42	9 23.8	20.7	4.5	8.7	34	. .	. .	. .	708	716	95.5	55 14 15.6	. .	+ 1 21.0	106 21 57.8	. .
2	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		61.0	. .		. .
3	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
4	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
5	350 46	10 22.0	18.8	23.9	1.3	34	. .	223	. .	229	. .	90.9	9 10 28.4	. .	+ 9.4	60 16 59.0	— 1.6
6	23 6	1.0	27.8	3.8	11.5	35	. .	628	. .	644	. .	90.9	336 50 30.0	54.8	— 24.9	27 56 26.3	— 2.4
7	314 56	3.2	28.7	6.1	15.0	33	. .	439	. .	347	. .	90.9	44 59 57.2	. .	+ 58.3	96 7 16.7	— 0.5
8	312 38	9 26.8	22.2	29.5	5.6	32	. .	040	. .	980	. .	90.9	47 17 28.8	53.1	+ 1 3.2	98 24 53.2	— 2.5
9	330 20	25.8	21.5	27.2	5.3	29	. .	832	. .	826	. .	90.9	29 34 54.4	. .	+ 33.2	80 41 48.8	— 1.4
10	145 44	29.0	25.7	7.1	15.5	35	870	818	856	846	866	90.9	214 12 32.6	51.6	+ 39.8	16 53 9.0	+ 2.2
11	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
12	46 30	24.4	20.7	26.4	2.2	33	. .	. .	. .	666	688	90.9	313 25 51.9	. .	— 1 2.0	4 31 11.1	+28.0
13	328 16	29.3	24.7	29.8	7.9	33	. .	673	. .	653	. .	90.9	31 39 56.1	. .	+ 36.6	82 46 53.9	— 2.8
14	335 44	24.8	20.4	25.5	3.8	30	. .	. .	. .	524	462	90.9	24 11 3.7	45.0	+ 26.7	75 17 51.6	+ 0.1
15	326 44	25.0	20.9	26.7	4.0	31	. .	. .	. .	068	104	90.9	33 11 13.2	. .	+ 38.9	84 18 13.3	— 3.1
16	330 28	27.1	23.3	28.9	7.3	30	. .	943	. .	929	. .	90.9	29 27 13.1	44.8	+ 33.6	80 34 7.9	. .
17	343 54	27.2	24.1	28.4	4.8	29	. .	950	. .	938	. .	90.9	16 0 57.4	. .	+ 17.1	67 7 35.7	— 4.2
18	329 18	25.6	22.1	27.9	6.2	31	. .	619	. .	573	. .	90.9	30 37 22.0	. .	+ 35.2	81 44 18.4	— 2.5
19	27 52	10 0.7	26.7	2.9	7.8	32	. .	. .	. .	720	666	90.9	332 3 43.0	. .	— 31.6	23 9 32.6	— 3.7
20	64 46	3.3	27.4	21.4	26.5	37	237	. .	. .	. .	207	90.9	295 10 46.9	44.5	— 2 5.9	346 15 2.2	— 0.4
21	323 46	9 26.6	23.2	28.5	6.1	35	. .	. .	250	. .	218	90.9	36 10 18.3	. .	+ 43.5	81 17 23.0	— 2.2
22	352 6	25.7	22.6	27.8	7.0	30	562	. .	. .	. .	528	90.9	7 49 6.4	. .	+ 8.2	58 55 35.8	— 0.8
23	342 42	10 0.0	26.3	2.2	9.7	37	. .	. .	. .	. .	173	90.9	17 12 18.9	44.2	+ 18.4	68 18 58.5	— 0.8
24	0 2	9 26.0	23.3	1.0	2.7	33	. .	. .	. .	727	702	93.1	359 53 57.6	56.3	— 0.1	51 0 18.7	— 1.1
25	52 22	29.0	23.6	3.5	5.4	31	970	. .	975	. .	030	93.1	307 33 32.4	. .	— 1 15.4	358 38 38.2	— 1.8
26	310 34	27.8	25.5	2.5	9.3	36	. .	. .	. .	755	835	93.1	49 22 47.3	. .	+ 1 7.6	100 30 16.1	— 1.9
27	321 6	10 2.3	29.0	5.0	13.3	33	. .	. .	. .	780	690	93.1	38 50 4.2	. .	+ 46.7	89 57 12.1	— 0.1
28	168 54	2.3	29.1	5.8	9.4	35	532	478	. .	382	412	93.1	191 2 28.7	. .	+ 11.3	40 3 41.2	— 2.9
29	304 24	0.0	28.0	6.0	14.5	33	470	488	. .	. .	. .	93.1	55 31 59.5	. .	+ 1 23.6	106 39 44.3	. .
30	304 56	9 27.0	24.7	3.0	9.5	32	. .	. .	. .	310	318	93.1	54 59 38.0	63.5	+ 1 22.0	106 7 21.2	. .
31	294 56	28.8	24.4	5.9	10.9	36	. .	. .	. .	793	800	93.1	65 0 48.4	. .	+ 2 2.8	116 9 12.4	+ 1.5
32	310 44	21.6	15.5	11.4	22.4	31	. .	002	. .	890	. .	93.1	49 11 18.9	. .	+ 1 5.6	100 18 45.7	+ 3.0
33	0 12	27.5	25.7	6.1	7.5	33	. .	590	. .	513	. .	93.1	359 43 58.1	. .	— 0.3	50 50 19.0	+ 3.9
34	330 38	10 1.8	29.3	10.9	16.8	36	. .	. .	. .	790	752	93.1	29 18 53.1	. .	+ 32.3	80 25 46.6	+ 4.5
35	292 59	12.2	15.8	1.2	0.0	32	010	975	. .	. .	. .	93.1	66 56 23.9	. .	+ 2 14.3	118 4 59.4	. .
36	292 59	12.2	15.8	1.2	0.0	29	. .	. .	. .	080	045	93.1	66 55 39.8	. .	+ 2 14.3	118 4 15.3	. .
37	141 54	7.8	17.9	0.6	8.5	34	. .	. .	990	080	200	70.1	218 1 49.1	43.5	+ 46.8	13 3 45.3	0.0
38	212 38	19.0	24.4	10.1	16.7	32	352	331	. .	. .	228	70.1	147 17 16.6	. .	— 38.4	83 49 43.0	+ 1.0
39	349 26	11.3	18.5	1.6	9.1	33	. .	022	. .	. .	. .	70.1	10 29 20.1	. .	+ 11.1	61 35 52.4	— 0.3
40	335 32	2.4	10.0	26.3	2.1	35	. .	430	. .	382	. .	70.1	24 23 49.4	. .	+ 27.1	75 30 37.7	+ 0.2
41	302 24	3.5	10.4	25.1	5.1	38	. .	070	. .	058	. .	70.1	57 32 30.7	. .	+ 1 33.9	108 40 25.8	— 0.3
42	46 36	5.8	12.2	25.7	3.2	33	750	780	. .	814	770	70.1	313 19 26.7	. .	— 1 3.4	4 24 44.5	+26.8
43	49 40	8.7	15.4	29.5	6.1	36	310	. .	410	. .	280	70.1	310 16 8.5	. .	— 1 10.6	1 21 19.1	— 0.7
44	326 36	19.7	25.6	8.8	19.7	35	. .	. .	. .	410	075	70.1	33 17 29.7	. .	+ 39.4	84 24 30.3	— 3.1
45	327 20	8.6	15.8	28.0	6.1	34	. .	. .	. .	858	858	70.1	32 33 12.5	. .	+ 38.2	83 40 11.9	— 3.0
46	330 28	16.6	22.9	8.5	17.0	34	. .	428	. .	340	. .	70.1	29 27 47.2	. .	+ 33.9	80 34 42.3	. .
47	343 54	16.3	23.5	6.2	15.1	31	. .	380	. .	320	. .	70.1	16 0 59.9	. .	+ 17.2	67 7 38.3	— 1.5
48	323 46	16.2	22.2	7.4	14.6	36	. .	610	. .	575	. .	70.1	36 10 19.9	. .	+ 43.8	87 17 24.9	— 0.3
49	323 4	18.4	25.2	8.4	16.7	34	. .	. .	. .	505	315	70.1	36 49 15.7	. .	+ 41.9	87 56 21.8	. .
50	342 28	17.5	23.8	6.9	16.1	30	. .	. .	. .	820	820	70.1	17 24 19.8	. .	+ 18.8	68 30 59.8	— 1.0

No.	Barom.	At. Ther.
	in.	°
6	30.27	59.0
23	30.29	47.0
24	30.32	49.8
30	30.41	56.8
37	30.38	47.9

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
1	— 7.3	— 16 11.1	. .	— 16 18.4
16	— 0.2	. .	. .	— 0.2
29	— 7.4	— 16 11.5	. .	— 16 18.9
30	— 7.3	+ 16 11.5	. .	+ 16 4.2
35	— 21.1	— 22.0	0.0	— 43.1
36	— 21.1	+ 22.0	. .	+ 0.9
46	— 0.2	. .	. .	— 0.2

DATE.	Number.		OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.														m. s.	s.	s.	s.	h. m. s.	s.
Nov. 7	1		Pallas	Sk.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
10	2		Polaris, S. P. . .	Sk.	. .	. .	32.0	6.0	39.0	11.0	44.5	. .	. .	14 38.50	−24.29	. .	−56.39	1 13 17.82	− 0.68
	3	α	Virginis . . .	Sk.	19.6	22.2	23.7	29.9	32.0	34.1	40.2	41.8	44.3	19 31.98	− 1.23	−56.37	−56.39	13 18 34.36	− 0.04
	4	θ	Bootis	Sk.	31.5	35.6	38.0	48.2	51.6	55.0	5.0	7.4	11.6	21 51.54	− 0.35	. .	−56.39	14 20 54.80	+ 0.51
	5	5	Ursæ Minoris. .	Sk.	. .	. .	. .	. .	. .	. .	. .	14.8	21.0	28 40.29	+ 1.20	. .	−56.39	14 27 45.10	− 0.17
	6	ε	Bootis	Sk.	13.0	16.0	17.6	24.5	27.0	29.2	36.0	37.8	40.6	40 26.86	− 0.80	−56.41	−56.39	14 39 29.67	0.00
11	7		Sun I, S. . . .	Sk.	28.0	30.6	32.4	38.7	40.9	43.0	49.5	51.0	53.8	6 40.88	− 1.32	. .	−56.40	15 5 43.16	. .
	8		Sun II, N. . . .	Sk.	. .	. .	54.5	56.6	58.9	0.9	5.3	6.9	9.5	8 56.66	− 1.32	. .	−56.40	15 7 58.94	. .
	9		Polaris, S. P. . .	E.	. .	. .	39.0	14.0	47.0	17.0	55.0	. .	. .	14 46.40	−29.04	. .	−56.63	1 13 20.73	+ 2.57
	10	α	Virginis . . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	11	η	Ursæ Majoris . .	E.	12.7	16.7	19.0	28.6	31.8	35.0	44.5	46.9	50.9	43 31.79	− 0.27	. .	−56.63	13 42 34.89	0.00
	12	η	Bootis	E.	26.5	29.2	30.9	37.3	39.5	41.7	48.0	49.8	52.5	49 39.49	− 0.84	−56.64	−56.63	13 48 42.02	− 0.04
	13	α	Draconis . . .	E.	. .	. .	. .	. .	. .	3.9	13.7	17.4	23.4	1 54.36	+ 0.37	. .	−56.63	14 0 58.10	+ 0.10
	14	α	Bootis	E.	. .	. .	. .	. .	. .	. .	. .	3.5	6.0	10 53.08	− 0.83	−56.63	−56.63	14 9 55.62	0.00
	15	ε	Bootis	E.	13.1	16.0	17.8	24.7	27.0	29.3	36.3	38.0	40.9	40 27.01	− 0.72	−56.63	−56.64	14 39 29.65	− 0.03
12	16		Sun I, S. . . .	E.	31.6	34.5	36.0	42.4	44.5	46.6	53.0	54.7	57.5	10 44.53	− 1.30	. .	−56.64	15 9 46.59	. .
	17		Sun II, N. . . .	E.	48.1	50.8	52.4	58.9	1.0	3.0	9.6	11.2	13.9	13 0.99	− 1.30	. .	−56.64	15 12 3.05	. .
	18	τ	Herculis . . .	E.	. .	. .	. .	. .	. .	. .	. .	8.0	11.9	16 53.96	− 0.36	. .	−56.64	16 15 56.96	+ 0.22
	19	α	Herculis . . .	E.	39.7	42.4	43.9	50.4	52.5	54.6	0.8	2.3	5.0	9 52.40	− 0.90	−56.64	−56.65	17 8 54.85	+ 0.01
	20	α	Ophiuchi . . .	E.	50.9	53.6	55.0	1.4	3.5	5.6	11.8	13.4	16.0	30 3.47	− 0.94	−56.58	−56.65	17 29 5.88	− 0.04
	21		Venus I, N. . .	E.	33.5	36.6	38.3	45.0	47.4	49.9	56.6	58.4	1.3	33 47.44	− 1.45	. .	−56.65	17 32 49.34	+ 1.86
	22		Venus S. . . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	23	μ	Herculis . . .	E.	15.4	18.5	20.2	27.0	29.4	31.8	38.6	40.4	43.2	42 29.39	− 0.71	−56.62	−56.65	17 41 32.03	− 0.03
	24		Saturn I, S. . .	E.	25.1	27.9	29.4	. .	. .	. .	46.8	48.2	51.0	45 38.07	− 1.25	. .	−56.67	20 44 40.15	. .
	25		Saturn II, N. . .	E.	. .	. .	35.0	37.1	39.3	41.6	43.6	. .	. .	45 39.32	− 1.25	. .	−56.67	20 44 41.40	. .
	26	ν	Cygni	E.	10.6	13.9	16.0	24.0	26.8	29.5	37.4	39.5	43.0	53 26.74	− 0.36	−56.84	−56.67	20 52 29.71	+ 0.23
	27	σ^2	Ursæ Majoris, S. P.	E.	52.9	46.0	41.9	25.8	20.6	15.4	59.0	55.3	48.2	0 20.57	− 2.80	. .	−56.67	8 59 21.10	− 0.74
	28	61^1	Cygni	E.	58.0	1.3	3.3	11.2	13.7	16.3	24.0	26.0	29.3	2 13.68	− 0.42	−56.85	−56.67	21 1 16.59	+ 0.14
	29	61^2	Cygni	E.	59.6	2.8	4.8	12.6	15.2	17.8	25.5	27.4	30.7	2 15.16	− 0.42	. .	−56.67	21 1 18.07	+ 1.62
	30	ζ	Cygni	E.	19.0	22.0	23.7	30.8	33.1	35.5	42.7	44.4	47.3	8 33.17	− 0.57	−56.77	−56.67	21 7 35.63	+ 0.11
	31	1	Pegasi	E.	1.7	4.5	6.0	12.6	14.8	17.0	23.4	25.0	27.9	17 14.77	− 0.74	−56.75	−56.67	21 16 17.36	+ 0.03
	32	1	Draconis, S. P. .	E.	. .	. .	37.5	22.6	7.9	53.3	. .	. .	. .	20 8.06	− 6.20	. .	−56.67	9 19 5.19	− 1.42
	33	β	Aquarii . . .	E.	43.2	45.7	47.3	53.5	55.5	57.5	3.6	5.2	7.9	25 55.49	− 1.07	−56.69	−56.67	21 24 57.75	+ 0.05
	34		XXI, 13 . . .	E.	34.1	36.9	38.6	45.0	47.3	49.4	55.9	57.5	0.3	32 47.22	− 1.26	. .	−56.67	21 31 49.29	− 2.51
	35		B. A. C. 7585 . .	E.	2.5	5.3	7.0	13.5	15.8	18.0	24.6	26.3	29.0	41 15.78	− 0.69	. .	−56.67	21 40 18.42	− 1.79
	36		Weisse (2), 976 .	E.	. .	. .	28.5	30.7	32.9	35.0	37.3	. .	. .	41 32.88	− 0.69	. .	−56.67	21 40 35.52	− 1.79
	37	μ	Capricorni. . .	E.	13.2	15.8	17.4	23.8	25.8	27.9	34.3	35.9	38.5	47 25.84	− 1.18	−56.65	−56.67	21 46 27.99	+ 0.01
	38	α	Aquarii. . . .	E.	6.5	9.0	10.6	16.7	18.7	20.8	26.8	28.5	31.0	0 18.73	− 1.01	−56.68	−56.67	21 59 21.05	+ 0.04
	39		B. A. C. 7742 . .	E.	35.7	37.3	41.5	43.7	45.9	48.0	50.1	54.2	55.8	6 45.80	− 0.79	. .	−56.67	22 5 48.34	− 2.09
	40		B. A. C. 7755 . .	E.	. .	. .	. .	. .	. .	. .	27.5	30.5	35.5	8 11.77	+ 0.23	. .	−56.67	22 7 15.33	− 1.02
	41	π	Aquarii. . . .	E.	38.3	40.8	42.3	48.5	50.5	52.6	58.7	0.2	2.8	19 50.52	− 0.98	−56.62	−56.67	22 18 52.87	− 0.03
	42	9	Draconis, S. P. .	E.	16.0	5.0	58.6	32.5	23.9	15.4	49.6	42.8	32.0	25 23.98	− 4.04	. .	−56.67	10 24 23.27	− 0.94
	43	η	Aquarii. . . .	E.	40.7	43.4	44.9	51.0	53.0	55.0	1.0	2.7	5.3	29 53.00	− 1.00	−56.63	−56.67	22 28 55.33	− 0.01
	44	ζ	Pegasi	E.	58.1	0.8	2.3	8.5	10.6	12.6	18.9	20.4	23.2	36 10.60	− 0.86	−56.70	−56.68	22 35 13.06	+ 0.08
	45		B. A. C. 7923 . .	E.	51.0	54.0	55.7	2.9	5.2	7.6	14.6	16.4	19.3	38 5.19	− 0.58	. .	−56.68	22 37 7.93	− 2.10
	46		B. A. C. 7937 . .	E.	7.3	10.0	11.5	18.0	20.1	22.4	28.8	30.5	33.3	40 20.21	− 0.74	. .	−56.68	22 39 22.79	− 2.26
	47	ε	Piscium . . .	E.	12.6	15.2	16.7	23.0	25.0	27.1	33.3	34.8	37.4	57 25.01	− 0.90	−56.64	−56.69	0 56 27.42	− 0.03
	48		Polaris	E.	. .	. .	55.0	21.0	45.0	13.0	39.0	. .	. .	13 46.60	+30.26	. .	−56.69	1 13 20.17	+ 2.17

1. Wire A used.
1 to 23 inclusive. Microscope readings very discordant.
13. Bisections at wires V and VI.
24. Microscopes re-adjusted; reading of V greater than the others.
31. Telescope micrometer reading decreased five revolutions in reduction.
34. Wire B used.
42. Bisections at sets B and D.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	294 46	9 21.9	27.5	9.2	21.1	34	. .	. .	. .	970	010	70.1	65 7 27.0	41.5	+ 2 8.8	116 15 57.0	− 4.8
2	52 22	10 4.5	15.0	1.0	1.5	34	155	. .	080	. .	115	70.1	307 33 32.1	. .	− 1 13.4	358 38 39.9	− 1.6
3	310 34	8.6	21.4	4.0	11.2	38	. .	. .	. .	842	820	70.1	49 22 50.6	64.1	+ 1 5.8	100 30 17.6	− 0.8
4	13 28	2.6	14.8	12.0	21.4	35	. .	. .	. .	840	830	70.1	346 28 6.9	. .	− 13.6	37 34 14.5	− 0.6
5	37 18	3.3	19.2	5.0	9.6	40	. .	. .	. .	658	. .	70.1	322 39 16.8	. .	− 43.0	23 44 55.0	− 4.2
6	348 38	9 9.2	25.5	9.0	13.6	32	. .	. .	. .	352	312	70.1	11 17 14.5	. .	+ 11.3	62 23 47.0	− 1.9
7	303 16	10 14.2	0.2	12.6	23.4	36	090	138	. .	. .	. .	70.1	56 40 17.4	. .	+ 1 25.5	107 48 4.1	.
8	303 48	7.5	24.2	5.9	15.7	35	. .	. .	. .	160	210	70.1	56 7 56.4	65.5	+ 1 23.8	107 15 41.4	. .
9	52 22	10.0	25.0	10.2	14.2	33	705	. .	680	. .	690	70.0	307 33 34.8	. .	− 1 16.8	358 38 39.2	− 2.7
10	310 34	14.5	29.8	13.5	23.8	38	. .	100	. .	040	. .	70.0	49 22 47.7	. .	+ 1 8.9	100 30 17.8	− 0.7
11	10 58	12.0	27.7	12.5	17.6	33	435	435	. .	395	365	70.0	348 57 33.9	. .	− 11.5	40 3 43.6	− 2.0
12	340 4	6.7	21.0	6.7	13.0	34	. .	250	. .	220	. .	70.0	19 51 40.4	. .	+ 21.3	70 58 22.9	− 1.7
13	26 0	9 23.0	8.3	22.3	0.0	35	. .	. .	. .	260	230	70.0	333 55 43.0	48.0	− 28.8	25 1 35.4	− 4.4
14	340 54	10 8.3	23.3	7.1	15.0	39	. .	. .	. .	960	980	70.0	19 3 10.3	. .	+ 20.3	70 9 51.8	− 1.4
15	348 38	9.7	29.5	12.8	20.5	32	. .	080	. .	050	. .	70.0	11 17 13.6	. .	+ 11.7	62 23 46.5	− 2.7
16	303 0	7.2	20.7	2.7	14.5	37	820	870	. .	. .	. .	70.0	56 56 35.0	50.5	+ 1 29.8	108 4 26.0	. .
17	303 32	12.1	27.5	9.2	20.5	35	. .	. .	. .	795	785	70.0	56 24 9.5	. .	+ 1 28.0	107 31 58.7	. .
18	7 40	9.6	25.8	9.2	18.7	39	. .	. .	. .	165	135	70.0	352 17 0.5	. .	− 8.0	43 23 13.7	− 1.5
19	335 34	14.6	29.8	13.7	20.5	31	. .	495	. .	485	. .	70.0	24 21 6.2	. .	+ 26.6	75 27 54.0	− 0.7
20	332 42	9.1	24.5	7.5	18.8	35	. .	200	. .	200	. .	70.0	27 13 58.3	. .	+ 30.3	78 20 49.8	+ 0.3
21	293 12	11.0	26.0	9.5	20.0	36	030	. .	. .	. .	850	70.0	66 44 10.8	. .	+ 2 16.0	117 52 48.0	. .
22	293 12	11.0	26.0	9.5	20.0	38	. .	920	. .	865	. .	70.0	66 44 56.2	. .	+ 2 16.1	117 53 33.5	. .
23	348 50	12.9	28.7	11.5	21.6	33	. .	855	. .	845	. .	70.0	11 5 41.4	. .	+ 11.6	62 12 14.2	− 0.1
24	302 2	15.2	0.0	23.9	1.2	33	020	. .	. .	000	. .	75.7	57 53 32.8	. .	+ 1 34.5	109 1 28.5	. .
25	302 2	15.2	0.0	23.9	1.2	31	. .	995	. .	975	. .	75.7	57 53 17.3	. .	+ 1 34.5	109 1 13.0	. .
26	1 44	21.2	5.8	0.3	4.7	35	. .	865	. .	815	. .	75.7	355 12 22.1	. .	− 1.9	49 18 41.4	+ 1.7
27	73 22	18.3	1.7	26.0	2.0	39	. .	520	. .	570	. .	75.7	286 35 14.3	. .	− 3 17.6	337 38 17.9	+ 2.0
28	359 10	17.0	3.2	26.8	2.5	32	. .	. .	. .	280	200	75.7	0 45 24.4	. .	+ 0.8	51 51 46.4	+ 1.4
29	359 10	17.0	3.2	26.8	2.5	32	. .	. .	. .	855	800	75.7	0 45 33.4	. .	+ 0.8	51 51 55.4	+ 0.4
30	350 46	23.3	9.2	2.3	5.8	36	. .	270	. .	200	. .	75.7	9 10 30.2	. .	+ 9.6	60 17 51.0	+ 0.2
31	340 18	24.5	11.1	4.8	8.0	35	. .	260	. .	215	. .	75.7	19 37 0.3	42.2	+ 21.3	70 43 42.8	+ 0.2
32	59 8	20.3	7.8	4.8	7.7	33	. .	110	. .	125	. .	75.7	300 47 40.0	. .	− 1 39.9	351 52 21.3	− 3.7
33	314 56	22.6	8.2	2.2	6.0	34	. .	060	. .	985	. .	75.5	44 59 55.7	. .	+ 59.6	96 7 16.5	− 1.0
34	300 54	19.0	3.8	28.3	3.7	29	. .	970	. .	010	. .	75.7	59 3 23.7	. .	+ 1 39.3	110 11 24.2	+ 4.3
35	343 26	24.3	10.1	3.3	6.1	37	. .	780	. .	730	. .	75.7	16 30 54.4	. .	+ 17.7	67 37 33.3	+19.1
36	343 26	24.3	10.1	3.3	6.1	38	280	. .	230	. .	. .	75.7	16 31 1.8	. .	+ 17.7	67 37 40.7	+19.1
37	306 56	24.8	7.7	2.0	7.5	37	. .	500	. .	510	. .	75.7	53 0 49.8	. .	+ 1 19.2	104 8 30.2	+ 1.7
38	320 8	22.2	6.9	2.5	10.0	30	. .	085	. .	015	. .	75.7	39 48 27.4	. .	+ 49.8	90 55 38.4	− 0.1
39	336 28	24.9	10.7	5.3	9.6	32	. .	830	. .	810	. .	75.7	23 27 40.3	. .	+ 26.0	74 34 27.5	+18.6
40	19 50	24.2	6.0	1.0	2.8	34	. .	. .	. .	170	130	75.7	340 5 57.7	. .	− 21.7	31 11 57.2	+27.9
41	321 48	26.0	12.0	5.8	11.8	35	. .	105	. .	065	. .	75.7	38 8 16.2	. .	+ 47.0	89 15 24.4	− 1.0
42	64 38	26.2	8.7	5.4	10.9	30	050	. .	. .	. .	055	75.7	295 16 57.7	. .	− 2 6.2	336 21 12.7	− 1.4
43	320 18	23.9	8.3	3.0	7.6	36	. .	385	. .	335	. .	75.7	39 38 32.5	. .	+ 49.6	90 45 43.3	− 0.1
44	331 14	22.0	5.8	0.7	6.2	35	. .	685	. .	645	. .	75.7	28 42 19.9	. .	+ 32.8	79 59 13.9	+ 0.7
45	350 36	24.1	9.2	1.7	6.5	31	. .	645	. .	620	. .	75.7	9 19 20.1	. .	+ 9.8	60 25 51.1	+24.0
46	339 46	21.0	5.5	28.5	5.0	37	. .	320	. .	320	. .	75.7	20 10 44.1	. .	+ 22.0	71 17 27.3	+21.3
47	328 16	21.4	4.8	28.9	5.0	34	. .	280	. .	175	. .	75.7	31 39 56.7	. .	+ 37.2	82 46 55.1	− 1.6
48	49 40	20.5	3.4	28.6	1.5	34	980	. .	990	. .	015	75.7	310 16 7.2	. .	− 1 11.1	1 21 17.3	− 0.6

No.	Barom.	At. Ther.
	in.	°
1	30.38	46.0
3	29.92	60.2
8	29.93	61.2
13	30.22	48.5
16	30.20	49.0
21	30.24	45.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
7	− 7.5	− 16 11.3	. .	− 16 18.8
8	− 7.4	+ 16 11.3	. .	+ 16 3.9
16	− 7.5	− 16 13.6	. .	− 16 21.1
17	− 7.4	+ 16 13.6	. .	+ 16 6.2
21	− 22.9	+ 22.8	. .	− 0.1
22	− 22.9	− 22.8	+ 0.1	− 45.6
24	− 0.7	− 7.8	. .	− 8.5
25	− 0.7	+ 7.8	. .	+ 7.1

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Collections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Nov. 12	1	θ^1 Ceti	E.	34.7	36.3	40.5	42.4	44.6	46.7	48.8	52.9	54.5	18 44.60	− 1.01	−56.65	−56.69	1 17 46.80	− 0.02
	2	η Piscium	E.	32.5	35.3	36.9	43.2	45.3	47.5	53.7	55.3	58.0	25 45.30	− 0.80	−56.65	−56.69	1 24 47.81	+ 0.03
	3	o Piscium	E.	32.9	35.5	37.0	43.1	45.3	47.4	53.6	55.2	57.8	39 45.31	− 0.89	−56.59	−56.69	1 38 47.73	− 0.13
	4	β Arietis	E.	28.6	31.4	33.0	39.5	41.7	43.9	50.4	52.0	54.7	48 41.69	− 0.72	−56.62	−56.69	1 47 44.28	− 0.05
	5	Neptune	E.	29.8	32.5	33.9	40.0	42.1	44.2	50.5	52.1	54.6	50 42.19	− 0.87	. .	−56.69	1 49 44.63	. .
	6	α Arietis	E.	51.9	54.6	56.3	3.0	5.2	7.5	14.2	15.9	18.6	1 5.24	− 0.68	−56.66	−56.69	2 0 7.87	− 0.02
	7	ξ^1 Ceti	E.	8.0	10.6	12.2	18.3	20.4	22.5	28.6	30.2	32.7	7 20.39	− 0.89	−56.74	−56.69	2 6 22.81	+ 0.09
	8	γ Ceti	E.	35.2	37.9	39.3	45.5	47.5	49.5	55.8	57.2	59.8	37 47.52	− 0.96	−56.74	−56.70	2 36 49.86	+ 0.04
	9	Diana	E.	30.2	33.2	35.2	42.4	44.6	46.9	54.0	55.8	58.9	43 44.58	− 0.55	. .	−56.70	2 42 47.33	. .
	10	Hygeia	E.	1.5	4.4	6.0	12.5	14.6	16.7	23.4	25.0	27.7	52 14.64	− 0.71	. .	−56.70	2 51 17.23	. .
	11	Pallas	E.	20.4	23.5	25.3	32.0	34.3	36.7	43.6	45.2	48.1	53 34.34	− 1.37	. .	−56.70	2 52 36.27	. .
	12	α Ceti	E.	30.5	33.0	34.5	40.7	42.7	44.8	50.9	52.5	55.0	56 42.73	− 0 95	−56.64	−56.70	2 55 45.08	− 0.04
	13	12 Canum Venat.	F.	50.3	53.5	55.3	3.3	5.8	8.5	16.3	18.4	21.6	51 5.89	− 0.30	−56.61	−56.69	12 50 8.90	− 0.08
	14	Polaris, S. P.	F.	. .	. .	39.0	12.0	46.0	18.0	. .	. .	. .	14 45.58	−32.04	. .	−56.69	1 13 16.85	− 0.95
	15	a Virginis	F.	22.2	23.8	27.8	29.9	32.0	34.1	36.2	40.3	41.9	19 32.02	− 1.04	−56.56	−56.69	13 18 34.29	− 0.15
	16	ζ Virginis	F.	2.9	5.4	6.9	13.0	15.0	17.0	23.2	24.6	27.4	29 15.04	− 0.90	−56.69	−56.69	13 28 17.45	0.00
	17	η Ursæ Majoris	F.	16.5	18.9	25.2	28.4	31.7	34.8	38.0	44.4	46.8	43 31.63	− 0.03	. .	−56.69	13 42 34.91	0.00
	18	η Bootis	F.	26.5	29.0	30.7	37.2	39.4	41.6	48.0	49.5	52.3	49 39.36	− 0.65	−56.68	−56.69	13 48 42.02	− 0.06
	19	a Draconis	F.	25.1	31.2	34.9	49.2	54.1	58.9	13.3	16.9	23.0	1 54.07	+ 0.67	. .	−56.69	14 0 58.05	− 0.03
	20	a Bootis	F.	40.0	42.5	44.2	50.7	52.9	55.0	1.6	3.2	6.0	10 52.90	− 0.64	−56.63	−56.69	14 9 55.57	− 0.06
	21	θ Bootis	F.	30.9	35.2	37.7	47.8	51.0	54.5	4.4	7.0	11.2	21 51.08	+ 0.06	. .	−56.69	14 20 54.45	+ 0.10
	22	5 Ursæ Minoris	F.	48.5	59.7	5.7	31.5	40.2	48.8	14.6	21.1	31.5	28 40.18	+ 2.10	. .	−56.69	14 27 45.59	+ 0.29
13	23	ϵ Piscium	F.	12.5	15.1	16.5	22.8	24.9	26.9	33.1	34.5	37.0	57 24.81	− 0.72	−56.62	−56.75	0 56 27.34	− 0.11
	24	Polaris	F.	. .	. .	46.0	12.0	39.0	8.0	33.0	. .	. .	13 39.60	+33.57	. .	−56.75	1 13 16.42	− 1.18
	25	θ^1 Ceti	F.	32.3	34.8	36.4	42.6	44.6	46.7	52.8	54.4	57.0	18 44.62	− 0.94	−56.85	−56.75	1 17 46.93	+ 0.12
	26	o Piscium	F.	32.9	35.4	36.9	43.2	45.3	47.3	53.5	55.0	57.6	39 45.23	− 0.70	−56.71	−56.75	1 38 47.78	− 0.07
	27	β Arietis	F.	28.7	31.4	33.0	39.5	41.7	43.9	50.3	52.0	54.7	48 41.69	− 0.54	−56.80	−56.75	1 47 44.40	+ 0.07
	28	Neptune	F.	. .	. .	. .	. .	. .	. .	44.8	46.0	48.6	50 36.29	− 0.69	. .	−56.75	1 49 38.85	. .
	29	1, 8	F.	. .	55.0	57.4	0.0	2.4	4.8	0.6	11.5	14.5	51 59.92	− 1.30	. .	−56.75	1 51 1.87	− 3.59
	30	ξ^1 Ceti	F.	7.9	10.5	12.1	18.1	20.3	22.5	28.5	30.0	32.6	7 20.28	− 0.70	−56.82	−56.75	2 6 22.83	+ 0.11
	31	γ Ceti	E.	35.3	38.0	39.5	45.5	47.5	49.6	55.7	57.3	59.9	37 47.59	− 0.78	−56.98	−56.93	2 36 49.88	+ 0.05
	32	Anonymous	F.	24.7	27.9	29.5	36.7	39.2	41.6	48.8	50.6	53.5	42 39.19	− 0.35	. .	−56.76	2 41 42.08	. .
	33	Hygeia	F.	. .	13.9	16.5	18.2	22.5	25.0	27.1	29.2	31.5	51 27.02	− 0.51	. .	−56.76	2 50 29.75	. .
	34	Anonymous	F.	. .	. .	. .	36.5	38.5	40.7	45.1	46.7	49.2	51 36.30	− 0.51	. .	−56.76	2 50 39.03	− 3.63
	35	Pallas	F	33.7	35.6	40.0	42.3	44.7	46.8	49.2	53.5	55.4	52 44.58	− 1.21	. .	−56.76	2 51 46.61	. .
	36	α Ceti	F.	30.5	33.0	34.6	40.6	42.7	44.8	51.0	52.5	55.0	56 42.74	− 0.76	−56.83	−56.76	2 55 45.22	+ 0.09
	37	ζ Arietis	E.	27.7	30.4	32.0	38.7	40.9	43.1	49.6	51.2	53.9	8 40.83	− 0.52	−56.98	−56.93	3 7 43.38	+ 0.01
	38	η Tauri	F.	47.6	50.4	52.0	58.7	0.9	3.1	9.7	11.4	14.2	41 0.89	− 0.47	−56.82	−56.76	3 40 3.66	+ 0.06
	39	ζ Persei	E.	59.8	2.8	1.6	11.8	14.1	16.5	23.7	25.6	28.6	47 14.17	− 0.33	−56.96	−56.93	3 46 16.91	+ 0.02
	40	γ^1 Eridani	E.	57.7	0.4	1.9	8.2	10.2	12.4	18.8	20.4	23.3	53 10.37	− 1.00	−56.87	−56.93	3 52 12.44	− 0.02
	41	γ Tauri	E.	26.4	28.5	30.0	36.4	38.5	40.7	47.0	48.7	51.2	13 38.60	− 0.60	−56.85	−56.93	4 12 41.07	− 0.07
	42	Anonymous	E.	35.0	37.5	39.5	45.8	47.8	50.2	56.7	58.4	1.0	14 47.99	− 0.52	. .	−56.93	4 13 50.54	. .
	43	Io	E.	41.5	44.3	46.0	52.1	54.1	56.3	2.6	3.9	6.6	18 54.16	− 0.67	. .	−56.93	4 17 56.56	. .
	44	Anonymous	F.	8.4	11.4	13.4	20.8	22.9	25.5	33.1	35.0	38.0	25 23.17	− 0.30	. .	−56.76	4 24 26.11	. .
	45	ι Aurigæ	F.	34.0	37.0	38.8	46.2	48.7	51.1	58.4	0.2	3.4	49 48.64	− 0.30	−56.80	−56.76	4 48 51.58	+ 0.06
	46	Polaris, S. P.	S.	29.0	40.0	35.0	. .	42.0	. .	. .	. .	. .	14 49.75	−35.88	. .	−56.72	1 13 17.15	− 0.22
	47	a Bootis	S.	39.9	42.5	44.4	50.8	52.9	55.0	1.5	3.2	6.2	10 52.93	− 0.53	−56.75	−56.73	14 9 55.67	+ 0.02
	48	ϵ Bootis	S.	12.9	15.8	17.6	24.8	26.9	29.2	36.0	37.8	40.7	20 26.86	− 0.40	−56.78	−56.74	14 39 29.72	+ 0.02
14	49	Sun I, N.	S.	45.0	46.6	50.5	52.8	55.0	56.9	59.0	3.7	5.3	18 54.98	− 1.09	. .	−56.74	15 17 57.15	. .
	50	Sun II, S..	S.	59.1	2.0	3.8	10.0	12.2	14.3	21.1	22.5	25.3	21 12.26	− 1.03	. .	−56.74	15 20 14.43	. .

9, 10, 32, 35, 42, 43, 44. Wire A used.
19, 22. Bisections at sets B and D.
32. Observed for Diana.
33, 34. Wire B used.
42. Observed for Dione.
44. Observed for Terpsichore.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	312 14	10 20.7	3.6	28.6	3.9	35	. .	540	. .	470	. .	75.7	47 42 15.4	. .	+ 1 6.2	98 49 42.8	+ 0.3
2	335 44	20.2	3.3	28.3	3.7	30	. .	790	. .	765	. .	75.7	24 11 2.8	. .	+ 27.1	75 17 51.1	− 0.2
3	329 34	15.8	1.7	26.0	1.1	31	. .	930	. .	920	. .	75.7	30 21 17.6	. .	+ 35.4	81 28 14.2	− 1.1
4	341 14	21.8	5.6	28.7	4.8	32	. .	125	. .	055	. .	75.7	18 41 24.2	. .	+ 20.4	69 48 5.8	− 1.0
5	330 26	20.5	4.6	0.7	6.2	36	. .	215	. .	165	. .	75.7	29 30 27.2	. .	+ 34.2	80 37 22.6	. .
6	343 54	17.2	2.3	26.3	1.0	30	. .	715	. .	650	. .	75.7	16 0 59.2	. .	+ 17.4	67 7 37.8	− 1.6
7	329 18	23.0	8.6	3.6	9.0	31	. .	805	. .	765	. .	75.7	30 37 22.8	. .	+ 35.8	81 44 19.8	− 1.2
8	323 46	20.3	4.9	0.0	6.9	35	.	675	. .	580	. .	75.7	36 10 18.6	36.0	+ 44.3	87 17 24.1	− 1.3
9	351 46	20.7	5.6	0.8	5.8	29	. .	605	. .	535	. .	75.7	8 6 13.1	. .	+ 8.6	59 12 42.9	− 0.9
10	342 8	24.5	8.5	3.6	9.2	27	. .	. .	. .	890	875	75.7	17 43 50.8	. .	+ 19.4	68 50 31.4	− 1.1
11	293 58	23.5	8.0	3.5	10.0	24	. .	. .	. .	840	805	75.7	65 55 36.5	. .	+ 2 14.9	117 4 12.6	− 4.8
12	324 38	22.7	6.3	2.2	7.7	29	. .	995	. .	960	. .	75.7	35 16 53.8	35.5	+ 42.9	86 23 57.9	− 2.5
13	0 2	18.3	3.2	27.3	5.0	34	. .	. .	. .	598	580	75.9	359 54 1.6	. .	− 0.1	51 0 22.7	+ 1.0
14	52 22	10.2	24.6	20.4	27.0	33	. .	775	758	750	. .	75.9	307 33 40.2	41.0	− 1 18.1	358 38 43.3	+ 1.1
15	310 34	10.4	25.4	19.3	29.4	38	. .	. .	. .	048	052	75.9	49 22 46.8	. .	+ 1 10.0	100 30 18.0	− 0.6
16	321 6	11.0	26.7	20.9	0.3	35	. .	. .	. .	. .	075	75.9	38 50 2.5	. .	+ 48.4	89 57 12.1	− 1.0
17	10 58	4.8	17.6	13.0	21.7	33	. .	. .	. .	898	864	75.9	348 57 36.8	. .	− 11.7	40 3 46.3	+ 0.4
18	340 4	18.6	2.3	26.8	5.2	33	. .	412	. .	396	. .	75.9	19 51 42.6	. .	+ 21.7	70 58 25.5	+ 0.7
19	26 0	14.3	27.2	24.0	1.4	33	844	846	. .	832	816	75.9	333 55 45.2	43.2	− 29.3	25 1 37.1	− 3.1
20	340 54	17.2	1.5	24.6	3.5	39	. .	. .	. .	242	176	75.9	19 3 10.4	. .	+ 20.7	70 9 52.3	− 0.2
21	13 28	25.6	10.1	5.4	11.7	34	. .	668	. .	650	. .	75.9	346 28 9.6	. .	− 14.4	37 34 16.4	+ 0.5
22	37 18	22.4	6.9	0.8	9.7	39	. .	590	. .	450	. .	75.9	322 39 20.5	43.8	− 45.6	13 44 56.1	− 3.8
23	328 16	21.4	4.1	27.3	6.8	34	. .	106	. .	116	. .	77.5	31 39 56.6	30.4	+ 38.0	82 46 55.8	− 1.0
24	49 40	13.7	25.0	19.5	25.7	35	532	506	534	584	586	77.5	310 16 9.8	. .	− 1 12.8	1 21 18.2	+ 0.6
25	312 14	21.6	2.5	26.9	4.2	35	. .	360	. .	376	. .	77.5	47 42 14.6	. .	+ 1 7.8	98 49 43.6	+ 1.0
26	329 34	16.5	29.8	23.9	1.1	31	. .	850	. .	858	. .	77.5	30 21 17.5	. .	+ 36.2	81 28 14.9	− 0.4
27	341 14	17.7	0.9	24.0	1.3	32	. .	278	. .	280	. .	77.5	18 41 24.7	. .	+ 20.9	69 48 6.8	0.0
28	330 26	20.8	3.1	28.4	6.5	38	. .	. .	. .	178	168	77.5	29 30 59.0	. .	+ 35.0	80 37 55.2	. .
29	288 20	11.7	24.9	18.2	26.5	33	. .	. .	. .	604	638	77.5	71 35 39.5	. .	+ 3 3.9	122 45 4.6	+15.7
30	329 18	7.0	20.5	16.3	25.0	32	. .	672	. .	670	. .	77.5	30 37 21.8	29.4	+ 36.6	81 44 19.6	− 1.5
31	323 46	22.6	4.6	29.1	6.8	35	. .	555	. .	525	. .	77.5	36 10 19.3	. .	+ 45.2	87 17 25.7	+ 0.2
32	351 44	29.3	12.2	6.7	12.3	30	. .	070	. .	060	. .	77.5	8 8 29.4	. .	+ 8.9	59 14 59.5	. .
33	342 10	14.8	28.8	22.0	29.2	32	. .	126	. .	. .	. .	77.5	17 47 53.4	. .	+ 19.9	68 54 34.5	− 1.1
34	342 10	14.8	28.8	22.0	29.2	41	. .	. .	. .	702	. .	77.5	17 50 20.1	. .	+ 19.9	68 57 1.2	+22.0
35	293 52	15.8	0.0	23.8	29.0	44	. .	. .	. .	. .	176	77.5	66 3 52.2	. .	+ 2 18.7	117 12 32.1	− 4.8
36	324 38	20.3	2.3	25.2	4.6	30	. .	. .	. .	128	. .	77.5	35 16 54.1	. .	+ 43.8	86 23 59.1	− 1.4
37	341 38	19.0	3.0	27.7	1.8	35	. .	955	. .	900	. .	77.5	18 18 22.5	. .	+ 20.5	69 25 4.2	− 0.2
38	344 46	27.1	9.0	2.0	9.6	34	. .	878	. .	874	. .	77.5	15 10 12.9	. .	+ 16.8	66 16 50.9	− 0.4
39	352 34	19.5	3.3	27.8	3.0	37	. .	310	. .	270	. .	77.5	7 22 43.9	. .	+ 8.0	58 29 13.1	− 1.7
40	307 12	14.3	27.8	22.5	0.6	35	. .	060	. .	990	. .	77.5	52 44 4.4	27.8	+ 1 21.4	103 51 47.0	+ 1.3
41	336 22	14.5	28.3	23.5	0.4	33	140	125	. .	. .	. .	77.5	23 33 35.6	. .	+ 27.1	74 40 23.9	− 0.4
42	341 52	11.4	24.5	18.9	25.8	29	. .	770	. .	780	. .	77.5	18 0 7.4	. .	+ 20.2	69 6 48.8	. .
43	331 6	20.8	1.6	25.3	4.2	40	. .	460	. .	470	. .	77.5	28 48 58.9	. .	+ 34.2	79 55 54.3	− 2.6
44	354 36	11 5.8	18.7	23.0	21.7	36	. .	750	. .	650	. .	77.5	5 18 20.7	. .	+ 5.8	56 24 47.7	. .
45	354 0	10 20.3	3.3	25.8	4.2	32	. .	. .	. .	312	306	77.5	5 55 28.2	. .	+ 6.4	57 1 55.8	+ 0.7
46	52 22	9.2	23.5	17.8	23.5	33	920	. .	. .	. .	. .	75.6	307 33 39.9	32.5	− 1 20.2	358 38 40.9	− 1.7
47	340 54	2.2	18.2	10.5	18.8	40	. .	050	. .	050	. .	75.6	19 3 8.2	. .	+ 21.2	70 9 50.6	− 2.2
48	348 38	6.7	21.7	15.4	22.3	32	. .	348	. .	254	. .	75.6	11 17 13.7	. .	+ 12.2	62 23 47.1	− 2.7
49	302 28	16.7	0.3	26.2	1.0	35	536	512	. .	. .	. .	75.6	57 28 12.2	37.2	+ 1 35.5	108 36 8.9	. .
50	303 0	4.2	20.5	15.8	23.0	34	. .	. .	. .	598	673	75.6	56 55 48.5	. .	+ 1 33.6	108 3 43.3	. .

No.	Barom.	At. Ther.
	in.	°
12	30.29	38.0
14	30.41	40.5
19	30.41	41.5
22	30.41	42.5
23	30.49	34.5
30	30.50	35.0
40	30.50	33.8
46	30.66	32.5
49	30.62	35.5

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
5	− 0.2	. .	. .	− 0.2
28	− 0.2	. .	. .	− 0.2
49	− 7.5	− 16 12.8	. .	− 16 20.3
50	− 7.5	+ 16 12.8	. .	+ 16 5.3

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Nov. 14	1	κ Ophiuchi	S.	28.2	30.7	32.2	38.4	40.7	42.6	48.9	50.3	52.9	52 40.54	− 0.69	−56.82	−56.76	16 51 43.09	+ 0.10
	2	α Ophiuchi	S.	50.9	53.5	55.0	1.3	3.4	5.4	11.8	13.2	16.0	30 3.39	− 0.65	−56.80	−56.76	17 29 5.98	+ 0.07
	3	Venus I, S.	S.	16.8	19.6	21.2	28.2	30.5	32.9	39.9	41.6	44.3	35 30.56	− 1.24	. .	−56.76	17 34 32.56	+ 1.92
	4	Venus N.	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	5	Moon I	S.	40.0	43.0	44.8	51.8	54.2	56.5	3.5	5.4	8 3	55 54.17	− 1.25	. .	−56.79	19 54 56.13	+71.09
	6	61¹ Cygni	S.	1.2	3.0	8.2	10.8	13.5	16.0	18.7	23.8	25.8	2 13.44	− 0.25	−56.82	−56.80	21 1 16.39	− 0.02
	7	61² Cygni	S.	2.6	4.4	9.7	12.2	14.8	17.6	20.1	25.3	27.3	2 14.89	− 0.25	. .	−56.80	21 1 17.84	+ 1.43
	8	α Cephei (R.)	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	9	β Cephei	S.	. .	. .	. .	56.4	2.3	8.5	19.9	24.8	32.5	27 56.40	+ 1.31	. .	−56.80	21 27 0.91	+ 0.17
	10	B. A. C. 7520	S.	37.9	40.6	42.1	48.7	50.9	53.0	59.5	1.1	3.8	32 50.84	− 0.60	. .	−56.81	21 31 53.43	− 1.78
	11	ϵ Pegasi	S.	47.0	49.6	51.0	57.2	59.3	1.4	7.5	9.2	11.7	38 59.32	− 0.74	−56.70	−56.81	21 38 1.77	− 0.10
	12	79 Draconis (R.)	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	13	α Aquarii	S.	6.5	9.0	10.5	16.6	18.7	20.8	26.9	28.5	31.0	0 18.72	− 0.87	−56.84	−56.81	21 59 21.04	+ 0.06
	14	Groom. 1620, S. P.	S.	. .	. .	1.6	38.3	15.6	51.3	29.3	. .	. .	12 15.22	− 9.84	. .	−56.81	10 11 8.57	−10.37
	15	B. A. C. 7851	S.	. .	. .	49.7	17.0	43.3	9.5	34.8	. .	. .	23 42.86	+ 9.24	. .	−56.81	22 22 52.29	+ 5.82
	16	226 Cephei	S.	. .	. .	41.0	49.3	57.4	5.9	13 8	. .	. .	30 57.48	+ 2.18	. .	−56.81	22 30 2.85	− 0.38
	17	ι Cephei	S.	. .	. .	59.1	4.3	9.5	14.0	18.8	. .	. .	46 9.14	+ 0.88	. .	−56.81	22 45 13.21	+ 0.06
	18	α Piscis Australis	S.	28.2	31.2	32.7	39.9	42.2	44.6	51.8	53.5	56.6	51 42.30	− 1.30	−56.80	−56.81	22 50 44.19	+ 0.03
	19	Polaris	S.	. .	. .	46.0	15.5	38.5	10.0	32.0	. .	. .	13 40.40	+32.97	. .	−56.84	1 13 16.53	− 0.61
	20	α Arietis	S.	. .	. .	0.8	3.0	5.2	7.3	9.7	. .	. .	1 5.20	− 0.53	−56.76	−56.84	2 0 7.83	− 0.07
	21	γ Ceti	S.	. .	. .	43.4	45.5	47.5	49.5	51.6	. .	. .	37 47.50	− 0.82	−56.85	−56.85	2 36 49.83	0.00
	22	Diana	S.	19.6	23.0	25.0	32.2	34.5	36.7	43.7	45.6	48.7	41 34.33	− 0.40	. .	−56.85	2 40 37.08	. .
	23	Anonymous	S.	16.5	19.0	. .	. .	. .	. .	38.2	39.9	42.7	50 29.51	− 0.56	. .	−56.85	2 49 32.10	. .
	24	Anonymous	S.	. .	. .	26.5	28.6	30.6	33.1	35.0	. .	. .	50 30.76	− 0.56	. .	−56.85	2 49 33.35	. .
15	25	12 Canum Venat.	E.	51.2	54.4	56.4	4.3	7.0	9.7	17.7	19.6	22.9	51 7.02	− 0.38	−57.58	−57.58	12 50 9.06	0.00
	26	Polaris, S. P.	E.	. .	. .	44.0	19.0	52.0	24.0	56.0	. .	. .	14 51.00	−33.86	. .	−57.59	1 13 19.55	+ 3.18
	27	α Virginis	E.	20.8	23.3	24.9	31.1	33.2	35.3	41.5	43.0	45.6	19 33.19	− 1.15	−57.55	−57.59	13 18 34.45	− 0.06
	28	η Ursæ Majoris	E.	13.7	17.7	20.0	29.5	32.6	35.8	45.5	47.9	51.8	43 32.72	− 0.09	. .	−57.59	13 42 35.04	+ 0.07
	29	η Bootis	E.	27.4	30.2	31.8	38.3	40.4	42.7	49.0	50.6	53.4	49 40.42	− 0.74	−57.60	−57.59	13 48 42.09	− 0.04
	30	α Draconis	E.	26.1	32.1	35.7	50.5	55.1	0.0	14.5	18.0	24.3	1 55.14	+ 0.65	. .	−57.60	14 0 58.19	+ 0.10
	31	α Bootis	E.	41.0	43.7	45.3	51.8	54.0	56.2	2.6	4.3	7.0	10 53.99	− 0.73	−57.58	−57.60	14 9 55.66	− 0.02
16	32	β Aquarii	E.	44.2	46.8	48.4	54.4	56.6	58.6	4.9	6.3	8.9	25 56.57	− 1.09	−57.80	−57.72	21 24 57.76	+ 0.11
	33	B. A. C. 7520	E.	39.0	41.8	43.3	49.8	52.0	54.2	0.6	2.2	5.0	32 51.99	− 0.75	. .	−57.72	21 31 53.52	− 1.74
	34	ϵ Pegasi	E.	48.0	50.5	52.1	58.4	0.5	2.6	8.6	10.3	12.9	39 0.43	− 0.88	−57.70	−57.72	21 38 1.83	− 0.01
	35	B. A. C. 7571	E.	43.0	45.7	47.5	54.3	56.6	58.8	5.5	7.3	10.2	39 56.54	− 0.65	. .	−57.72	21 38 58.17	− 1.66
	36	B. A. C. 7585	E.	. .	. .	14.8	16.8	19.0	21.1	25.6	27.2	30.0	41 16.78	− 0.70	. .	−57.72	21 40 18.36	− 1.73
	37	Weisse (2), 976	E.	. .	. .	31.6	33.8	36.1	38.4	42.7	44.4	47.2	41 33.88	− 0.70	. .	−57.72	21 40 35.46	− 1.73
	38	Moon S.	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	39	α Aquarii	E.	7.5	10.0	11.6	17.7	19.7	21.9	28.0	29.6	32.0	0 19.78	− 1.02	−57.77	−57.73	21 59 21.03	+ 0.07
	40	B. A. C. 7742	E.	34.2	36.9	38.5	44.9	46.9	49.0	55.4	57.0	59.6	6 46.93	− 0.80	. .	−57.73	22 5 48.40	− 2.03
	41	B. A. C. 7749	E.	. .	. .	. .	. .	31.6	35.0	42.9	45.6	50.4	7 27.60	+ 0.21	. .	−57.73	22 6 30.08	− 0.92
	42	π Aquarii	E.	39.2	42.0	43.6	49.6	51.6	53.7	59.8	1.4	3.9	19 51.64	− 1.00	−57.77	−57.73	22 18 52.91	+ 0.06
	43	9 Draconis, S. P.	E.	17.5	6.5	0.4	34.5	25.9	17.3	51.0	44.7	33.9	25 25.74	− 4.22	. .	−57.73	10 24 23.79	− 0.83
	44	η Aquarii	E.	41.9	44.5	46.0	52.0	54.1	56.2	2.3	3.8	6.3	29 54.12	− 1.02	−57.78	−57.73	22 28 55.37	+ 0.08
	45	226 Cephei	E.	. .	. .	. .	. .	. .	15.0	32.1	38.0	48.3	30 58.98	+ 2.00	. .	−57.73	22 30 3.25	+ 0.18
	46	ζ Pegasi	E.	. .	. .	9.6	11.7	13.7	15.8	19.8	21.3	24.0	36 11.59	− 0.87	−57.73	−57.74	22 35 12.98	+ 0.05
	47	ι Cephei	E.	. .	. .	0.3	5.4	10.5	15.4	20.4	. .	. .	46 10.40	+ 0.70	. .	−57.74	22 45 13.36	+ 0.30
	48	λ Aquarii	E.	51.5	54.0	55.6	1.9	4.0	6.0	12.2	13.7	16.3	47 3.91	− 1.12	−57.73	−57.77	22 46 5.02	+ 0.04
	49	ϵ Piscium	E.	13.7	16.3	17.9	24.0	26.1	28.2	34.3	36.0	38.4	57 26.10	− 0.91	−57.73	−57.77	0 56 27.42	− 0.02
	50	Polaris	E.	. .	. .	48.0	17.0	45.0	13.0	40.0	. .	. .	13 44.60	+32.12	. .	−57.78	1 13 18.94	+ 2.84

8. Bisections at wires B_1, C_3, C_5, and D_3.
12. Bisections at wires B_1, C_1, and C_5.
14, 16, 38, 43. Bisections at sets B and D.
15. Bisections at set C.
22, 24. Wire A used.
23. Wire B used; observed for Iphigenia.
24. Observed for Hygeia.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	330 38	10 3.3	16.9	12.5	19.7	38	. .	710	. .	672	. .	75.6	29 18 48.0	38.8	+ 34.2	80 25 43.4	+ 0.2
2	333 42	4.5	19.8	15.1	21.7	35	. .	298	. .	280	. .	75.6	26 13 58.1	. .	+ 30.0	77 20 49.3	− 0.6
3	293 20	2.5	18.4	13.7	20.5	37	082	. .	. .	. .	050	75.6	66 36 23.4	. .	+ 2 20.2	117 45 4.8	. .
4	293 20	2.5	18.4	13.7	20.5	33	. .	937	. .	935	. .	75.6	66 35 35.7	. .	+ 2 20.1	117 44 17.0	. .
5	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. . .	. .	. .		. .
6	359 10	5.9	22.2	15.2	20.6	32	880	. .	. .	. .	840	75.2	0 45 21.8	. .	+ 0.8	51 51 43.8	− 1.3
7	359 10	5.9	22.2	15.2	20.6	33	. .	400	. .	400	. .	75.2	0 45 29.7	. .	+ 0.8	51 51 51.7	+ 6.6
8	156 46	9.0	26.0	21.0	27.1	33	032	020	. .	922	997	75.2	203 9 27.9	32.2	+ 26.4	27 56 26.9	− 1.7
9	31 2	12.9	27.1	19.7	27.7	32	. .	. .	. .	242	130	75.2	328 53 18.6	. . .	− 37.2	19 59 2.6	− 4.2
10	339 48	6.2	21.8	14.6	21.8	34	. .	448	. .	472	. .	75.2	20 7 45.9	. .	+ 22.6	71 14 29.7	+17.5
11	330 20	7.3	21.3	15.6	23.7	30	. .	918	. .	872	. .	75.2	29 34 52.2	31.8	+ 35.0	80 41 48.4	− 2.1
12	145 44	9.6	25.4	19.5	26.1	37	075	172	. .	057	. .	75.2	214 12 30.2	. .	+ 41.9	16 53 9.1	− 0.6
13	320 8	10.2	24.6	18.6	27.1	36	. .	664	. .	688	. .	75.2	39 48 23.8	31.2	+ 51.4	90 55 36.4	− 2.2
14	56 8	12.9	26.4	20.9	26.8	35	. .	. .	. .	393	396	75.2	303 48 5.2	. .	− 1 32.1	354 52 54.3	+27.9
15	46 30	8.0	21.5	15.7	22.3	34	730	. .	. .	. .	796	75.2	313 25 51.4	. .	− 1 5.3	4 31 7.3	+29.3
16	36 36	9.8	21.6	16.5	23.8	32	. .	. .	. .	371	325	75.2	323 19 15.6	. .	− 46.1	14 24 50.7	− 2.1
17	26 36	13.3	25.5	21.7	28.6	40	. .	. .	. .	250	210	75.2	333 21 21.9	29.5	− 31.1	24 27 12.0	− 1.5
18	290 48	10.5	23.4	19.1	26.1	35	. .	900	. .	856	. .	75.2	69 8 11.0	. .	+ 2 41.4	120 17 13.6	− 2.0
19	49 40	6.2	20.3	14.7	19.1	35	821	. .	846	. .	796	75.2	310 16 5.9	26.5	− 1 13.5	1 21 13.6	− 3.6
20	343 54	1.2	16.5	10.4	16.5	31	. .	. .	. .	. .	547	75.2	16 0 57.0	. .	+ 17.9	67 7 36.1	− 3.2
21	323 46	5.2	18.8	13.2	22.0	36	. .	522	. .	470	. .	75.2	36 10 15.7	25.7	+ 45.6	87 17 22.5	− 3.0
22	351 40	1.1	16.3	10.2	15.2	35	. .	625	. .	450	. .	75.2	8 13 24.0	. .	+ 9.0	59 19 54.2	− 0.9
23	342 4	4.1	19.2	13.2	20.2	32	. .	258	. .	304	. .	75.2	17 53 44.1	. .	+ 20.2	69 0 25.5	. .
24	342 4	4.1	19.2	13.2	20.2	29	. .	. .	. .	. .	900	75.2	17 48 1.6	. .	+ 20.0	68 54 42.8	. .
25	0 2	4.2	20.5	17.8	18.6	35	. .	420	. .	410	. .	75.2	359 53 59.9	. .	− 0.1	51 0 21.0	− 1.7
26	52 22	14.8	1.0	28.2	28.8	33	290	. .	340	. .	350	75.2	307 33 37.8	46.5	− 1 17.6	358 38 41.4	− 1.9
27	310 34	20.5	6.5	2.3	5.0	37	. .	490	. .	440	. .	75.2	49 22 46.7	. .	+ 1 10.0	100 30 17.9	− 1.1
28	10 58	24.6	10.5	6.6	7.5	32	. .	580	. .	615	. .	75.2	348 57 36.4	. .	− 11.5	40 3 46.1	− 0.9
29	340 4	20.2	5.2	0.5	2.5	33	. .	420	. .	365	. .	75.2	19 51 43.0	. .	+ 21.3	70 58 25.5	− 0.1
30	26 0	24.0	11.0	6.0	6.5	33	. .	270	. .	250	. .	75.2	333 55 46.4	. .	− 28.8	25 1 38.8	− 2.6
31	340 54	22.6	8.5	3.3	6.4	39	. .	015	. .	000	. .	75.2	19 3 12.2	. .	+ 20.2	70 9 53.6	+ 0.3
32	314 56	24.8	8.7	4.2	6.4	34	. .	050	. .	005	. .	75.2	44 59 56.6	. .	+ 59.7	96 7 17.5	− 0.2
33	339 48	23.0	8.0	3.9	7.3	33	. .	640	. .	625	. .	75.2	20 7 50.2	. .	+ 21.9	71 14 33.3	+17.3
34	330 20	18.5	2.8	0.0	2.5	30	300	300	. .	. .	. .	75.2	29 34 54.2	45.0	+ 34.0	80 41 49.4	− 1.2
35	346 6	25.7	9.8	5.3	10.0	30	. .	425	. .	400	. .	75.2	13 49 3.0	. .	+ 14.7	64 55 38.9	+19.6
36	343 26	18.8	4.2	28.5	1.3	38	. .	. .	. .	. .	000	75.2	16 30 52.8	. .	+ 17.8	67 37 31.8	+18.8
37	343 26	18.8	4.2	28.5	1.3	38	. .	. .	. .	. .	685	75.2	16 31 3.3	. .	+ 17.8	67 37 42.3	+19.0
38	301 44	2.7	6.6	1.8	5.2	32	335	. .	150	. .	895	75.2	58 11 25.3	. .	+ 1 36.3	109 19 22.8	. .
39	320 8	24.0	9.0	3.4	9.3	35	. .	930	. .	895	. .	75.2	39 48 25.8	. .	+ 50.0	90 55 37.0	− 1.7
40	336 28	26.3	13.4	6.2	11.2	32	700	665	. .	. .	. .	75.2	23 27 39.0	. .	+ 26.0	74 34 26.2	+18.4
41	18 36	22.5	9.4	6.5	7.0	28	. .	. .	. .	940	905	75.2	341 18 40.0	. .	− 20.3	32 24 40.9	+27.9
42	321 48	25.5	12.3	5.3	10.7	35	. .	050	. .	020	. .	75.2	38 8 14.4	. .	+ 47.2	89 15 22.8	− 2.8
43	64 38	26.0	10.2	6.5	8.5	29	860	. .	. .	. .	875	75.2	295 16 56.3	. .	− 2 6.6	346 21 10.9	+ 0.3
44	320 18	25.3	9.6	3.3	10.5	36	234	100	. .	. .	. .	75.2	39 38 30.1	. .	+ 49.8	90 45 41.1	− 2.5
45	36 36	25.3	9.3	3.5	5.7	31	. .	. .	. .	235	120	75.2	323 19 15.3	. .	− 44.8	14 24 51.7	− 0.8
46	331 14	24.0	8.0	3.0	5.6	35	. .	. .	. .	475	450	75.2	28 42 18.1	. .	+ 32.9	79 49 12.2	− 1.1
47	26 36	19.8	5.2	0.2	5.0	39	735	705	. .	. .	. .	75.2	333 21 21.1	. .	− 30.2	24 27 12.1	− 1.2
48	312 48	25.5	10.5	1.2	8.7	31	. .	. .	. .	380	330	75.2	47 7 16.4	42.0	+ 1 4.8	98 11 42.4	− 1.9
49	328 16	25.1	9.5	3.3	7.6	33	. .	985	. .	935	. .	75.2	31 39 56.0	. .	+ 37.4	82 46 54.6	− 2.2
50	49 40	17.5	3.1	26.3	28.5	34	850	. .	000	. .	000	75.2	310 16 3.8	. .	− 1 11.6	1 21 13.4	− 3.1

No.	Barom.	At. Ther.
	in.	°
8	30.57	36.0
17	30.57	34.0
26	30.55	40.0
34	30.50	48.0
48	30.50	46.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	° ′ ″
3	− 21.8	− 24.0	+ 0.2	− 45.6
4	− 21.8	+ 24.0	. .	+ 2.2
38	−48 53.4	− 15 45.1	. .	−1 4 38.5

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
													m. s.	s.	s.	s.	h. m. s.	s.
1874. Nov 16	1	θ^1 Ceti	E.	33.3	35.9	37.5	43.7	45.7	47.8	54.0	55.7	58.3	18 45.77	− 1.13	−57.81	−57.78	1 17 46.86	+ 0.05
	2	38 Cassiopeæ	E.	19.5	26.9	34.3	48.9	54.8	0.6	15.4	22.6	30.2	22 54.80	+ 1.11	. .	−57.78	1 21 58.13	+ 0.28
	3	η Piscium	E.	33.8	36.4	37.9	44.4	46.5	48.6	55.0	56.5	59.1	25 46.47	− 0.80	−57.82	−57.78	1 24 47.89	+ 0.11
	4	o Piscium	E.	34.1	36.7	38.2	44.4	46.5	48.7	54.8	56.3	58.9	39 46.51	− 0.89	−57.79	−57.79	1 38 47.83	− 0.03
	5	β Arietis	E.	29.8	32.6	34.2	40.7	42.9	45.0	51.6	53.2	55.9	48 42.88	− 0.72	−57.71	−57.79	1 47 44.37	+ 0.04
	6	Anonymous	E.	24.2	26.8	28.5	34.6	36.6	38.9	44.6	46.5	48.8	50 36.61	− 0.88	. .	−57.79	1 49 37.94	. .
	7	I, 8	E.	. .	. .	. .	. .	3.6	5.9	10.9	12.7	15.8	52 1.16	− 1.51	. .	−57.79	1 51 1.86	− 3.58
	8	α Arietis	E.	53.0	55.8	57.7	4.1	6.3	8.5	15.2	16.9	19.7	1 6.33	− 0.67	−57.75	−57.79	2 0 7.87	− 0.03
	9	ξ^1 Ceti	E.	9.0	11.7	13.3	19.4	21.5	23.6	29.8	31.3	33.9	7 21.50	− 0.89	−57.84	−57.79	2 6 22.82	+ 0.09
	10	γ Ceti	E.	36.3	38.9	40.4	46.6	48.7	50.8	56.9	58.4	1.1	37 48.68	− 0.97	−57.87	−57.79	2 36 49.92	+ 0.05
	11	Diana	E.	. .	. .	. .	27.6	30.0	32.3	37.0	38.8	41.7	39 27.55	− 0.54	. .	−57.79	2 38 29.22	. .
	12	Hygeia	E.	54.0	56.6	58.3	4.6	6.7	9.2	15.5	17.2	20.0	49 6.90	− 0.71	. .	−57.80	2 48 8.39	. .
	13	Juno	E.	36.5	39.2	40.6	46.7	48.8	50.9	57.0	58.7	1.2	56 48.84	− 1.08	. .	−57.80	2 55 49.96	. .
	14	48 Cephei	E.	34.4	45.7	52.6	20.5	29.9	38.9	6.8	14.5	25.0	5 29.81	+ 2.46	. .	−57.81	3 4 34.46	+ 0.37
	15	ζ Arietis	E.	. .	. .	37.4	39.6	41.8	44.0	46.2	. .	. .	8 41.80	− 0.71	−57.73	−57.81	3 7 43.28	− 0.12
	16	η Tauri	E.	48.7	51.6	53.3	59.9	2.2	4.6	11.0	12.8	15.6	41 2.19	− 0.66	−57.89	−57.82	3 40 3.71	+ 0.07
	17	ζ Persei	E.	0.9	2.9	5.6	12.6	15.0	17.6	24.9	26.6	29.7	47 15.09	− 0.53	−57.64	−57.82	3 46 16.74	− 0.19
	18	γ^1 Eridani	E.	58.6	1.5	3.0	9.4	11.5	13.6	20.0	21.5	24.2	53 11.51	− 1.20	−57.78	−57.82	3 52 12.49	0.00
	19	Io	E.	. .	. .	. .	. .	. .	. .	20.2	22.0	24.6	16 12.08	− 0.87	. .	−57.83	4 15 13.38	. .
	20	Terpsichore	E.	. .	. .	. .	. .	. .	. .	23.8	25.6	28.6	22 13.95	− 0.49	. .	−57.83	4 21 15.63	. .
20	21	Polaris, S.P.	F.	. .	. .	46.0	18.0	52.0	24.5	57.0	. .	. .	14 51.50	. .	. .	. .		. .
21	22	Polaris	F.	. .	. .	42.5	. .	35.5	1.0	27.5	. .	. .	13 35.20	+40.15	. .	−59.38	1 13 15.97	+ 2.23
	23	θ^1 Ceti	F.	34.9	37.5	39.0	45.4	47.4	49.4	55.4	57.0	59.7	18 47.30	− 1.03	−59.46	−59.38	1 17 46.89	+ 0.10
	24	η Piscium	F.	37.9	39.4	43.6	45.7	47.9	50.0	52.0	56.3	57.8	25 47.84	− 0.64	−59.37	−59.38	1 24 47.82	+ 0.06
	25	o Piscium	F.	35.6	38.1	39.6	45.8	47.9	49.9	56.0	57.5	0.2	39 47.84	− 0.75	−59.26	−59.38	1 38 47.71	− 0.15
	26	β Arietis	F.	33.8	35.5	39.9	42.1	44.3	46.5	48.7	53.0	54.6	48 44.27	− 0.55	−59.36	−59.37	1 47 44.33	− 0.01
	27	Neptune	F.	42.2	44.9	46.3	52.4	54.6	56.8	2.9	4.5	7.0	49 54.62	− 0.74	. .	−59.39	1 48 54.49	. .
	28	I, 7	F.	. .	. .	51.0	53.2	55.7	58.0	0.2	. .	. .	51 55.62	− 1.41	. .	−59.39	1 50 54.82	− 3.52
	29	α Arietis	F.	54.5	57.3	59.0	5.6	7.8	10.0	16.8	18.3	21.0	1 7.81	− 0.51	−59.38	−59.39	2 0 7.91	0.00
	30	ξ^1 Ceti	F.	10.6	13.3	14.7	21.0	23.0	25.1	31.2	32.8	35.4	7 23.01	− 0.76	−59.46	−59.39	2 6 22.86	+ 0.11
	31	Moon I, S.	F.	0.0	2.7	4.3	10.7	13.0	15.2	21.6	23.2	26.0	18 12.97	− 0.66	. .	−59.39	2 17 12.92	+71.85
	32	Hygeia	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	33	Pallas	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	34	Juno	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	35	ζ Persei	F.	2.4	5.4	7.0	14.3	16.7	19.1	26.4	28.0	31.3	47 16.73	− 0.31	−59.42	−59.41	3 46 17.01	0.00
	36	Anonymous	F.	23.6	26.3	28.0	34.5	36.9	38.8	45.5	47.0	50.0	7 36.73	− 0.54	. .	−59.42	4 6 36.77	. .
	37	Io	F.	22.1	24.7	26.6	32.7	34.9	37.0	43.3	45.0	47.5	11 34.87	− 0.74	. .	−59.42	4 10 34.71	. .
	38	Anonymous	F.	. .	55.0	58.2	0.0	3.0	5.3	10.4	11.8	14.9	17 0.30	− 0.26	. .	−59.42	4 16 0.62	. .
	39	Anonymous	F.	. .	. .	. .	19.5	22.0	24.6	29.6	31.4	34.6	17 19.69	− 0.26	. .	−59.42	4 16 20.01	. .
	40	α Tauri	F.	32.6	35.3	36.8	43.2	45.4	47.5	53.9	55.4	58.2	29 45.37	− 0.62	−59.41	−59.42	4 28 45.33	− 0.03
	41	Vesta	F.	6.6	9.2	10.8	17.0	19.1	21.3	27.5	29.4	31.8	31 19.19	− 0.65	. .	−59.43	4 30 19.11	. .
	42	ι Aurigæ	F.	36.9	39.9	41.7	48.9	51.5	53.8	1.1	2.9	6.0	49 51.41	− 0.28	−59.47	−59.43	4 48 51.70	0.00
	43	11 Orionis	F.	13.4	16.0	17.6	23.9	26.0	28.2	34.5	36.0	38.7	58 26.03	− 0.64	−59.38	−59.43	4 57 25.96	− 0.12
	44	ϵ Ursæ Minoris, S.P.	F.	21.3	2.4	51.1	21.4	. .	. .	. .	. .	. .	59 50.72	− 8.10	. .	−59.43	16 58 43 19	− 0.83
	45	Astræa	F.	32.4	34.9	36.6	43.3	45.3	47.6	53.5	55.3	57.7	4 45.18	− 0.66	. .	−59.43	5 3 45.09	. .
23	46	Polaris, S.P.	E.	11.0	21.0	. .	25.0	58.0	32.0	. .	. .	. .	14 32.14	−16.27	. .	−60.39	1 13 15.48	+ 2.75
	47	β Ursæ Minoris	E.	. .	. .	46.7	54.4	1.9	9.7	17.5	. .	. .	52 2.04	+ 0.70	. .	−60.41	14 51 2.33	+ 0.16
24	48	Sun I, N.	E.	28.9	31.5	33.1	39.8	42.0	44.2	50.6	52.4	55.0	0 41.94	− 0.82	. .	−60.44	15 59 40.68	. .
	49	Sun II, S.	E.	47.9	50.8	52.4	58.9	1.1	3.3	9.9	11.5	14.1	3 1.10	− 0.82	. .	−60.44	16 1 59.84	. .
	50	β Draconis	E.	14.8	19.0	21.6	31.5	34.9	38.4	48.2	50.7	54.9	28 34.89	− 0.18	. .	−60.47	17 27 34.24	+ 0.11

2, 44 Bisections at sets B and D.
6. Observed for Neptune.
11, 19, 20, 32, 36, 37, 38, 39. Wire A used.
36. Observed for Dione.
38, 39. Observed for Terpsichore.
47. Bisections at set C.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	312 14	10 21.5	5.4	29.0	5.5	35	. .	415	. .	405	. .	75.2	47 42 14.5	. .	+ 1 6.7	98 49 42.4	— 0.5
2	30 38	24.6	8.3	1.0	7.3	29	795	. .	. .	. .	820	75.2	329 16 51.5	. .	— 36.1	20 22 36.6	— 0.4
3	335 44	17.0	0.0	25.0	0.0	30	. .	995	. .	995	. .	75.2	24 11 2.2	. .	+ 27.3	75 17 50.7	— 0.5
4	329 34	20.5	5.8	28.9	2.7	31	. .	675	. .	660	. .	75.2	30 21 16.5	. .	+ 35.6	81 28 13.3	— 2.0
5	341 14	16.9	1.8	25.3	0.0	32	. .	395	. .	355	. .	75.2	18 41 23.9	. .	+ 20.6	69 48 5.7	— 1.0
6	330 24	16.9	2.7	24.8	2.8	33	. .	. .	. .	270	235	75.2	29 31 38.4	. .	+ 34.5	80 38 34.1	. .
7	288 20	17.5	2.5	25.5	0.5	33	. .	. .	. .	515	490	75.2	71 35 41.6	. .	+ 3 1.1	122 45 3.9	+15.1
8	343 54	20.7	7.0	0.0	3.3	30	. .	495	. .	485	. .	75.2	16 0 59.3	. .	+ 17.5	67 7 38.0	— 1.1
9	329 18	22.4	8.0	3.3	6.5	31	. .	780	. .	750	. .	75.2	30 37 21.0	. .	+ 36.0	81 44 18.2	— 2.9
10	323 46	21.2	5.9	0.8	6.0	35	. .	670	. .	640	. .	75.2	36 10 19.0	. .	+ 44.6	87 17 24.8	— 0.9
11	351 32	19.2	4.2	27.2	1.0	34	. .	. .	. .	450	440	75.2	8 21 24.8	. .	+ 9.0	59 27 55.0	— 0.9
12	341 56	18.2	2.6	26.0	1.7	34	. .	985	. .	935	. .	75.2	18 0 4.6	. .	+ 19.8	69 6 45.6	— 1.1
13	315 48	22.0	6.6	0.1	5.7	31	630	635	. .	640	585	75.2	44 7 17.3	. .	+ 59.2	95 14 37.7	— 5.9
14	38 18	22.1	6.3	2.6	3.2	34	315	395	. .	360	355	75.2	321 38 1.5	. .	— 48.3	12 43 34.4	— 0.9
15	341 38	23.2	8.7	3.0	7.2	35	. .	. .	. .	720	700	75.2	18 18 22.4	34.5	+ 20.2	69 25 3.8	— 0.5
16	344 46	16.8	2.7	23.8	29.5	35	. .	620	. .	550	. .	75.2	15 10 12.8	. .	+ 16.6	66 16 50.6	— 0.5
17	352 34	19.7	5.0	27.5	1.9	37	. .	595	. .	540	. .	75.2	7 22 46.0	. .	+ 7.9	58 29 15.1	+ 0.6
18	307 12	16.6	1.4	25.6	1.8	35	. .	035	. .	995	. .	75.2	52 44 4.5	. .	+ 1 20.4	103 51 46.1	— 0.1
19	330 44	17.5	2.8	26.5	2.4	32	. .	950	. .	860	. .	75.2	29 9 0.2	. .	+ 34.2	80 15 55.6	— 2.6
20	354 42	17.6	3.3	26.8	29.5	35	. .	. .	. .	040	975	75.2	5 11 32.4	. .	+ 5.6	56 17 59.2	— 0.6
21	52 22	15.7	29.0	23.8	28.4	33	418	400	396	396	404	78.2	307 33 40.5	36.0	— 1 17.6	358 38 44.1	— 0.8
22	49 40	1.7	13.1	7.3	13.0	35	950	. .	958	. .	970	78.2	310 16 4.6	. .	— 1 11.8	1 21 14.0	— 1.0
23	312 14	8.1	19.3	14.0	21.2	36	. .	282	. .	266	. .	78.2	47 42 16.0	29.3	+ 1 6.9	98 49 44.1	+ 0.7
24	335 44	16.2	27.9	21.3	0.3	30	. .	. .	. .	960	962	78.2	24 11 3.5	. .	+ 27.4	75 17 52.1	+ 1.0
25	329 34	14.9	27.7	22.2	29.2	31	. .	962	. .	956	. .	78.2	30 21 17.9	. .	+ 35.6	81 28 14.7	— 0.7
26	341 14	13.2	25.1	18.8	24.2	32	642	650	. .	. .	. .	78.2	18 41 25.3	. .	+ 20.6	69 48 7.1	+ 0.6
27	330 22	11.6	22.9	16.3	25.5	38	. .	524	. .	514	. .	78.2	29 34 53.9	. .	+ 34.6	80 41 49.7	. .
28	291 36	18.5	29.1	22.5	0.5	35	. .	. .	. .	212	254	78.2	68 20 9.7	. .	+ 2 32.4	119 29 3.3	+14.7
29	343 54	18.1	0.0	24.6	29.7	30	. .	660	. .	666	. .	78.2	17 1 0.2	. .	+ 18.7	68 7 40.1	+ 1.3
30	329 18	4.7	19.0	14.3	21.7	32	. .	. .	. .	824	818	78.2	30 37 22.9	. .	+ 36.1	81 44 20.2	— 1.0
31	335 14	19.6	29.4	23.8	2.8	34	. .	622	388	926	. .	78.2	24 41 56.8	28.5	+ 28.1	75 48 46.1	. .
32	341 32	15.0	26.3	19.4	28.9	31	. .	570	. .	580	. .	78.2	18 20 37.9	. .	+ 20.2	69 27 19.3	— 1.1
33	293 2	19.5	29.1	24.2	29.9	34	. .	. .	. .	. .	898	78.2	66 54 5.1	. .	+ 2 22.3	118 2 48.6	— 4.8
34	315 26	16.4	27.8	21.4	0.7	35	. .	. .	. .	. .	430	78.2	44 30 12.0	. .	+ 1 0.0	95 37 33.2	— 5.8
35	352 34	16.1	28.2	22.3	29.0	37	. .	. .	. .	590	608	78.2	7 22 45.3	. .	+ 7.9	58 29 14.4	+ 0.4
36	341 46	23.2	4.6	28.2	5.2	38	. .	884	. .	880	. .	78.2	18 8 37.7	. .	+ 20.0	69 15 18.9	. .
37	330 14	13.1	25.6	19.2	28.5	39	. .	. .	. .	342	. .	78.2	29 40 36.1	. .	+ 34.8	80 47 32.1	— 2.6
38	354 48	13.5	25.5	18.8	26.8	38	. .	. .	. .	486	. .	78.2	5 6 22.7	. .	+ 5.5	56 12 49.4	. .
39	354 48	13.5	25.5	18.8	26.8	40	. .	. .	. .	. .	880	78.2	5 6 59.8	. .	+ 5.5	56 13 26.5	. .
40	337 18	18.2	0.3	24.3	1.0	33	326	322	. .	. .	. .	78.2	22 37 41.0	. .	+ 25.5	73 44 27.7	— 0.7
41	335 38	12.1	23.0	17.9	24.8	38	. .	. .	. .	260	256	78.2	24 18 50.8	27.5	+ 27.6	75 25 39.6	— 1.4
42	354 0	11.8	23.5	16.8	25.0	32	. .	874	. .	880	. .	78.2	5 55 27.9	. .	+ 6.4	57 1 55.5	+ 1.1
43	336 16	19.8	1.2	27.8	3.4	31	774	762	. .	. .	. .	78.2	23 39 19.3	. .	+ 26.8	74 46 7.3	— 1.9
44	58 46	10.9	23.2	18.1	24.2	33	896	900	. .	. .	. .	78.2	301 9 42.6	27.0	— 1 41.1	352 14 22.7	+ 1.3
45	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
46	52 22	12.0	28.3	22.5	26.5	33	700	. .	750	. .	. .	74.7	307 33 40.0	. .	— 1 15.9	358 38 45.3	— 0.5
47	35 42	6.3	21.9	17.6	19.5	37	310	. .	. .	. .	290	74.7	324 14 29.0	. .	— 41.7	15 20 8.5	— 1.8
48	300 42	13.4	29.2	21.8	29.9	35	255	235	. .	. .	. .	74.7	59 14 4.5	. .	+ 1 36.4	110 22 2.1	. .
49	300 10	4.4	19.1	14.4	22.3	37	. .	. .	. .	375	420	74.7	59 46 29.1	49.5	+ 1 38.6	110 54 28.9	. .
50	13 26	19.2	6.7	0.9	1.8	35	230	185	. .	. .	. .	74.7	346 30 10.6	. .	— 13.9	37 36 17.9	— 1.8

No.	Barom.	At. Ther.
	in.	°
15	30.47	38.0
21	29.980	37.0
23	30.03	34.5
31	30.04	33.0
41	30.07	33.5
44	30.09	32.0
49	29.63	47.5

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
27	— 0.2	. . .	. .	— 0.2
31	—25 19.1	— 16 40.5	. .	— 41 59.6
48	— 7.7	+ 16 13.4	. .	+ 16 5.7
49	— 7.7	— 16 13.4	. .	— 16 21.1

DATE.	Number.	OBJECT.	Obs.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Nov. 24	1	α Ophiuchi . . .	E.	54.3	57.0	58.6	4.8	6.9	9.0	15.3	16.9	19.5	30 6.92	− 0.58	−60.41	−60.47	17 29 5.87	− 0.03
	2	Venus I, N. . .	E.	30.0	33.1	34.8	41.6	43.8	46.0	53.1	54.7	57.7	33 43.87	− 0.86	. .	−60.47	17 32 42.54	+ 2.20
	3	Venus S. . . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	4	μ Herculis . . .	E.	19.0	21.9	23.7	30.6	32.9	35.2	42.1	43.9	46.8	42 32.90	− 0.47	−60.44	−60.47	17 41 31.96	− 0.03
	5	ψ^1 Draconis . . .	E.	. .	. .	. .	. .	. .	. .	32.8	38.0	46.5	45 6.23	+ 0.50	. .	−60.47	17 44 6.26	+ 0.05
	6	γ Draconis . . .	E.	21.0	25.0	27.6	37.4	40.7	43.9	53.8	56.3	0.5	54 40.69	− 0.10	. .	−60.47	17 53 40.03	− 0.02
	7	δ Ursæ Minoris . .	E.	. .	. .	11.5	45.0	20.0	54.5	29.0	. .	. .	13 20.00	+ 5.56	. .	− 60.48	18 12 25.10	− 0.02
	8	α Lyræ	E.	25.5	28.9	30.8	38.6	41.3	43.9	51.8	53.6	57.0	33 41.27	− 0.36	−60.54	−60.48	18 32 40.43	+ 0.08
	9	β Lyræ	E.	. .	. .	24.4	26.9	29.4	31.7	36.7	38.5	41.6	46 26.90	− 0.42	−60.50	−60.49	18 45 25.99	+ 0.04
	10	ζ Aquilæ	E.	29.1	30.7	34.9	37.0	39.1	41.2	43.3	47.5	49.0	0 39.09	− 0.58	−60.50	−60.49	18 59 38.02	+ 0.03
	11	δ Draconis . . .	E.	56.7	3.5	7.5	23.4	28.9	34.1	50.0	54.0	0.6	13 28.74	+ 0.23	. .	−60.49	19 12 28.48	+ 0.14
	12	Polaris, S. P. . .	F.	59.0	. .	. .	. .	. .	. .	. .	. .	. .	14 21.50	− 8.90	. .	−60.86	1 13 11.74	− 0.54
	13	ζ Virginis . . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	14	η Ursæ Majoris. .	F.	17.0	21.0	23.3	32.9	36.0	39.1	48.8	51.0	55.0	43 36.01	− 0.07	. .	−60.86	13 42 35.08	− 0.12
	15	α Draconis . . .	F.	. .	. .	. .	59.2	4.0	8.8	18.5	22.0	28.0	1 59.13	+ 0.12	. .	−60.87	14 0 58.38	+ 0.04
	16	θ Bootis	F.	39.6	42.2	48.9	52.4	55.8	59.0	2.4	9.0	11.5	21 55.64	− 0.04	. .	−60.87	14 20 54.73	+ 0.16
	17	5 Ursæ Minoris . .	F.	. .	. .	37.6	46.2	54.9	3.4	20.3	26.9	37.7	28 46.13	+ 0.51	. .	−60.88	14 27 45.76	+ 0.17
	18	ε Bootis	F.	17.0	19.9	21.6	28.6	30.9	33.1	40.1	41.8	44.7	40 30.86	− 0.20	−60.81	−60.88	14 39 29.78	− 0.09
	19	α^2 Libræ	F.	44.2	47.0	48.5	54.8	57.1	59.0	5.4	7.0	9.6	44 56.96	− 0.34	−60.94	−60.88	14 43 55.74	+ 0.05
	20	β Ursæ Minoris . .	F.	. .	. .	55.0	2.6	10.4	18.1	33.6	39.1	48.8	52 2.60	+ 0.43	. .	−60.88	14 51 2.15	− 0.05
	21	Mercury II, N. .	F.	45.0	47.8	49.2	55.5	57.6	59.7	6.1	7.6	10.2	54 57.63	− 0.34	. .	−60.88	14 53 56.41	− 0.31
	22	Mercury S. . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	23	β Bootis	F.	0.6	2.6	8.0	10.7	13.4	16.0	18.8	24.1	26.2	58 13.38	− 0.13	. .	−60.88	14 57 12.37	+ 0.04
	24	β Libræ	F.	3.5	6.2	7.8	14.0	16.0	18.0	24.2	25.9	28.4	11 6.00	− 0.32	−60.94	−60.89	15 10 14.79	+ 0.05
	25	μ^1 Bootis	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	26	α Coronæ Borealis .	F.	. .	. .	18.5	20.7	23.0	25.3	27.6	. .	. .	30 23.02	− 0.20	−61.03	−60.89	15 29 21.93	+ 0.14
	27	α Serpentis . . .	F.	53.7	56.3	57.7	3.9	5.9	8.0	14.1	15.7	18.2	39 5.94	− 0.27	−61.02	−60.89	15 38 4.78	+ 0.15
	28	ε Serpentis . . .	F.	21.9	24.6	26.1	32.2	34.2	36.4	42.5	44.0	46.6	45 34.28	− 0.28	−60.90	−60.90	15 43 33.10	0.00
25	29	Sun I, N. . . .	F.	43.7	46.4	48.5	54.5	56.8	59.1	5.6	7.2	10.0	4 56.81	− 0.36	. .	−60.90	16 3 55.55	. .
	30	Sun II, S. . . .	F.	3.2	6.0	7.6	14.0	16.4	18.4	25.0	26.7	29.6	7 16.32	− 0.36	. .	−60.90	16 6 15.06	. .
	31	μ Herculis . . .	F.	. .	. .	. .	. .	35.4	37.7	42.4	44.1	46.9	42 33.10	− 0.20	−60.91	−60.92	17 41 31.98	− 0.01
	32	γ Draconis . . .	F.	21.0	25.2	27.7	37.6	40.9	44.2	54.0	56.4	0.5	54 40.83	− 0.05	. .	−60.92	17 53 39.86	− 0.18
	33	δ Ursæ Minoris .	F.	. .	. .	. .	. .	. .	31.0	38.0	. .	48.5	13 21.07	+ 3.11	. .	−60.93	18 12 23.25	− 0.57
	34	1 Aquilæ. . . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	35	α Lyræ	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	36	β Lyræ	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	37	ζ Aquilæ. . . .	F.	26.8	29.3	30.9	37.1	39.3	41.4	47.8	49.2	51.9	0 39.30	− 0.25	−60.98	−60.94	18 59 38.11	+ 0.12
	38	δ Draconis . . .	F.	56.8	3.6	7.8	23.7	28.9	34.3	50.4	54.4	1.0	13 28.99	+ 0.18	. .	−60.94	19 12 28.23	− 0.07
	39	δ Aquilæ. . . .	F.	. .	. .	7.2	9.2	11.2	13.3	15.3	. .	. .	20 11.24	− 0.28	−60.98	−60.94	19 19 10.02	+ 0.00
	40	Polaris	F.	. .	. .	11.0	37.0	3.0	30.0	55.5	. .	. .	14 3.30	+ 9.08	. .	−61.03	1 13 11.35	− 0.08
	41	θ^1 Ceti. . . .	F.	35.8	38.2	39.8	46.1	48.0	50.2	56.4	57.8	0.5	18 48.09	− 0.30	−61.00	−61.03	1 17 46.76	− 0.01
	42	η Piscium . . .	F.	36.2	38.9	49.4	46.8	49.0	51.1	57.4	59.0	1.6	25 48.93	− 0.23	−60.88	−61.03	1 23 47.67	− 0.08
	43	o Piscium . . .	F.	36.6	39.2	40.6	46.9	49.0	51.0	57.2	58.7	1.4	39 48.96	− 0.25	−60.89	−61.03	1 38 47.68	− 0.17
	44	β Arietis	F.	32.5	35.1	36.8	43.3	45.5	47.6	54.2	55.9	58.6	48 45.50	− 0.20	−60.95	−61.04	1 47 44.26	− 0.07
	45	Neptune . . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	46	ξ^1 Ceti (R.) . . .	F.	11.5	14.2	15.5	21.7	23.7	25.7	31.9	33.5	35.9	7 23.73	− 0.02	. .	−61.04	2 6 22.67	− 0.08
	47	Diana	F.	27.1	29.9	31.5	38.9	41.2	43.3	50.5	52.2	55.2	30 41.09	− 0.16	. .	−61.05	2 29 39.88	. .
	48	Pallas	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	49	Juno	F.	. .	. .	. .	. .	. .	. .	40.2	41.3	43.8	51 31.67	− 0.29	. .	−61.05	2 50 30.33	. .
	50	B. A. C. 960 . .	F.	. .	. .	26.5	46.7	. .	30.5	51.2	. .	. .	4 8.72	+ 1.99	. .	−61.05	3 3 9.66	−18.87

5. Bisections at wires V and VI.
12, 17, 50. Bisections at sets B and D.
20. Bisections at wires D_2 and D_3.
42. Telescope micrometer reading decreased five revolutions in reduction.
44. Bisections at wires II and III.
47. Wire A used.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	I.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	333 42	10 11.8	29.0	23.0	26.1	35	. .	210	. .	180	. .	74.7	26 14 3.0	. .	+ 28.5	77 20 52.7	+ 1.1
2	294 40	24.5	12.9	6.0	8.5	34	825	. .	. .	. .	650	74.7	65 16 9.3	. .	+ 2 4.7	116 24 35.2	. .
3	294 40	24.5	12.9	6.0	8.5	38	. .	555	. .	460	. .	74.7	65 17 6.5	. .	+ 2 4.8	116 25 32.5	. .
4	348 50	20.5	7.0	2.0	4.5	33	. .	515	. .	480	. .	74.7	11 5 45.6	. .	+ 11.3	62 12 18.1	+ 1.0
5	33 14	20.2	6.6	29.7	4.7	33	. .	. .	. .	215	280	74.7	326 41 41.8	. .	− 38.0	17 47 25.0	+ 0.5
6	12 32	20.8	7.8	0.4	4.0	32	820	820	. .	760	755	74.7	347 23 35.0	. .	− 12.9	38 29 43.3	− 0.3
7	47 38	23.0	10.8	3.7	7.3	35	035	. .	045	. .	030	74.7	312 18 11.8	. .	− 1 3.5	3 23 29.5	− 1.4
8	359 42	19.3	4.7	28.8	2.4	32	730	725	. .	720	720	74.7	0 13 31.8	. .	+ 0.2	51 19 53.2	+ 1.1
9	354 16	24.0	11.2	5.3	9.2	35	. .	. .	. .	700	690	74.7	5 40 23.7	. .	+ 5.8	56 46 50.7	− 0.6
10	334 44	20.3	7.6	1.0	4.0	36	. .	530	. .	510	. .	74.7	25 12 31.5	. .	+ 27.3	76 19 20.0	+ 3.8
11	28 28	26.5	13.7	8.0	8.9	32	. .	395	. .	355	. .	74.7	331 27 34.8	47.0	− 31.5	22 33 24.5	− 1.1
12	52 22	18.2	0.9	26.8	0.0	33	770	. .	. .	. .	. .	75.8	307 33 42.7	. .	− 1 18.3	358 38 45.6	− 0.6
13	321 6	17.3	1.8	26.7	2.4	34	. .	. .	. .	952	958	75.8	38 50 5.2	32.4	+ 48.5	89 57 14.9	− 0.4
14	10 58	20.6	4.1	29.3	3.5	33	. .	054	. .	058	. .	75.8	348 57 38.5	. .	− 11.8	40 3 47.9	− 2.3
15	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
16	13 28	21.9	6.9	2.5	6.8	35	. .	. .	. .	070	104	75.8	346 28 12.9	. .	− 14.5	37 34 19.6	− 0.7
17	37 18	19.8	4.2	29.6	3.7	40	. .	. .	. .	052	062	75.8	322 39 25.6	. .	− 45.8	13 45 1.0	− 3.6
18	348 38	22.0	4.9	0.3	4.9	31	. .	752	. .	754	. .	75.8	11 17 19.5	. .	+ 12.0	62 23 52.7	− 0.4
19	305 32	12.2	27.4	22.0	29.0	32	. .	668	. .	650	. .	75.8	54 23 25.2	34.9	+ 1 23.6	105 31 10.0	− 0.1
20	35 42	14.4	26.9	22.3	26.6	36	. .	. .	. .	864	884	75.8	324 14 30.3	. .	− 43.2	15 20 8.3	− 2.4
21	307 4	17.7	1.8	25.0	29.7	33	950	. .	. .	. .	912	75.8	52 51 48.0	. .	+ 1 19.1	103 59 28.3	. .
22	307 4	17.7	1.8	25.0	29.7	33	. .	510	. .	498	. .	75.8	52 51 41.6	. .	+ 1 19.1	103 59 21.9	. .
23	1 56	7.9	23.5	17.9	23.3	37	. .	. .	. .	780	796	75.8	358 0 40.2	. .	− 2.1	49 6 59.3	+ 0.2
24	312 8	19.6	3.1	27.0	4.3	33	. .	362	. .	376	. .	75.8	47 47 42.0	. .	+ 1 6.6	98 55 9.2	− 0.1
25	358 52	10.8	25.2	20.1	25.7	37	. .	810	. .	. .	. .	75.8	1 4 39.4	. .	+ 1.1	52 11 1.7	− 1.2
26	348 12	8.8	24.0	16.5	24.1	40	. .	. .	. .	074	060	75.8	11 45 15.1	. .	+ 12.5	62 51 48.8	− 0.4
27	327 52	7.6	21.2	15.2	23.2	34	448	450	. .	436	438	75.8	32 3 46.8	. .	+ 37.5	83 10 45.5	− 0.7
28	325 54	7.0	21.5	15.0	22.5	33	836	846	. .	848	848	75.8	34 1 37.3	36.9	+ 40.4	85 8 38.9	− 1.2
29	300 30	0.0	15.7	8.5	16.5	34	848	864	. .	. .	. .	75.8	59 25 46.2	37.2	+ 1 40.7	110 33 48.1	. .
30	299 58	6.3	21.7	15.7	22.0	36	. .	. .	. .	090	126	75.8	59 58 11.8	. .	+ 1 42.8	111 6 15.8	. .
31	348 50	7.0	21.6	17.9	23.9	34	. .	. .	. .	276	282	75.8	11 5 45.7	. .	+ 11.7	62 12 18.6	+ 1.2
32	12 32	12.5	28.1	23.0	0.9	33	336	350	. .	344	344	75.8	347 23 37.4	. .	− 13.3	38 29 45.3	+ 1.4
33	47 38	21.9	5.5	2.0	3.1	35	. .	. .	. .	. .	358	75.8	312 18 14.8	. .	− 1 5.3	3 23 30.7	− 0.5
34	312 44	14.6	29.7	26.0	0.2	36	. .	. .	. .	450	440	75.8	47 12 26.0	. .	+ 1 4.1	98 19 51.3	− 0.4
35	359 42	10.9	25.7	21.7	24.4	33	. .	. .	. .	180	164	75.8	0 13 32.0	. .	+ 0.2	51 19 53.4	+ 1.0
36	354 16	18.7	6.7	21.1	4.3	36	080	074	. .	. .	. .	75.8	5 40 22.7	. .	+ 5.9	56 46 49.8	− 1.2
37	334 44	10.5	26.5	21.2	25.9	36	. .	. .	. .	858	864	75.8	25 12 28.5	. .	+ 28.0	76 19 17.7	+ 1.4
38	28 28	17.9	3.4	27.0	1.2	33	. .	000	. .	020	. .	75.8	331 27 36.2	. .	− 32.3	22 33 25.1	− 0.8
39	323 56	1.6	19.1	14.3	18.1	39	. .	. .	. .	238	234	75.8	36 0 57.0	39.0	− 43.2	87 8 1.4	− 0.6
40	49 40	14.4	26.2	20.8	25.4	35	186	200	208	210	164	76.4	310 16 4.0	30.4	− 1 11.5	1 21 13.7	0.0
41	312 14	20.2	3.1	27.3	3.0	35	. .	622	. .	620	. .	76.4	47 42 17.0	. .	+ 1 6.6	98 49 44.8	+ 1.0
42	335 44	16.8	1.1	25.4	0.5	35	. .	956	. .	942	. .	76.4	24 11 3.2	. .	+ 27.3	75 17 51.7	+ 0.6
43	329 34	17.2	0.8	26.3	0.9	31	910	890	. .	880	884	76.4	30 21 18.0	. .	+ 35.6	81 28 14.8	− 0.7
44	341 14	25.7	8.7	2.4	6.7	31	. .	920	930	. .	. .	76.4	18 41 25.3	. .	+ 20.5	69 48 7.0	+ 0.7
45	330 20	6.9	21.0	16.0	23.0	37	. .	. .	. .	856	856	76.4	29 36 40.1	. .	+ 34.5	80 43 35.8	. .
46	210 34	22.9	7.3	1.8	4.0	36	. .	. .	. .	736	718	76.4	149 22 37.4	. .	− 36.0	81 44 19.8	− 1.5
47	350 50	14.4	29.5	22.2	27.8	38	. .	340	. .	324	. .	76.4	9 4 20.8	. .	+ 9.7	60 10 51.7	− 1.0
48	292 48	25.9	7.7	1.6	6.2	36	. .	. .	. .	010	046	76.4	67 8 27.5	29.0	+ 2 23.4	118 17 12.1	− 4.7
49	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
50	45 30	17.2	0.0	24.2	28.6	37	. .	740	. .	754	. .	76.4	314 26 39.1	. .	− 1 2.0	5 31 58.3	+23.3

No.	Barom.	At. Ther.
	in.	°
11	29.63	47.0
13	29.91	32.0
19	29.93	34.5
28	30.01	36.0
29	29.89	36.0
39	29.89	39.0
40	29.98	33.0
48	29.98	33.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
2	− 27.2	+ 28.7	. .	+ 1.5
3	− 27.2	− 28.7	+ 0.1	− 55.8
21	− 8.3	− 3.2	0.0	− 11.5
22	− 8.3	+ 3.2	. .	− 5.1
29	− 7.7	+ 16 13.8	. .	+ 16 6.1
30	− 7.8	− 16 13.8	. .	− 16 21.6
45	− 0.2	. .	. .	− 0.2

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar't.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Nov. 25	1	Anonymous . .	F.	2.0	4.9	6.7	13.0	14.9	17.2	23.7	25.2	28.1	4 15.08	− 0.20	. .	−61.05	4 3 13.83	. .
	2	Anonymous . .	F.	. .	. .	. .	. .	. .	. .	32.7	34.3	36.6	7 24.38	− 0.25	. .	−61.05	4 6 23.08	. .
	3	Anonymous . .	F.	. .	. .	. .	. .	. .	38.7	43.0	44.4	47.0	7 34.63	− 0.25	. .	−61.05	4 6 33.33	− 3.73
	4	ε Tauri . . .	F.	7.9	10.5	12.0	18.6	20.8	23.0	29.4	31.0	33.8	22 20.78	− 0.21	−61.01	−61.05	4 21 19.52	− 0.05
	5	Vesta	F.	51.0	53.8	55.3	1.5	3.8	6.0	12.3	13.8	16.4	27 3.77	− 0.23	. .	−61.05	4 26 2.49	. .
	6	α Tauri . . .	F.	33.8	36.4	38.0	44.4	46.6	8.8	55.0	56.6	59.3	29 46.54	− 0.22	−61.12	−61.05	4 28 45.27	+ 0.05
26	7	η Bootis . . .	Sk.	30.7	33.4	35.0	41.5	43.7	45.9	52.3	54.0	56.6	49 43.68	− 0.20	−61.08	−61.12	13 48 42.37	+ 0.01
	8	α Bootis . . .	Sk.	44.2	47.0	48.6	55.0	57.2	59.4	5.9	7.5	10.3	10 57.23	− 0.29	−61.05	−61.13	14 9 55.81	− 0.08
	9	ε Bootis . . .	Sk.	17.5	20.4	22.0	29.0	31.2	33.6	40.5	42.2	45.0	40 31.27	− 0.20	−61.12	−61.13	14 39 29.88	− 0.03
	10	α^2 Libræ . . .	Sk.	. .	. .	53.1	55.3	57.4	59.4	1.7	. .	. .	44 57.38	− 0.41	−61.25	−61.13	14 43 55.84	+ 0.11
	11	Mercury II, S. .	Sk.	49.7	52.4	53.9	0.3	2.3	4.4	10.7	12.3	15.0	58 2.33	− 0.41	. .	−61.13	14 57 0.79	− 0.26
	12	Mercury N. . .	Sk.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
27	13	Sun I, S. . .	Sk.	15.6	18.3	20.0	24.3	28.6	33.0	37.5	39.1	42.0	13 28.71	− 0.43	. .	−61.14	16 12 27.14	. .
	14	Sun II, N. . .	Sk.	35.3	37.9	49.5	46.0	48.3	50.6	57.0	58.8	1.5	15 48.32	− 0.43	. .	−61.14	16 14 46.75	. .
	15	κ Ophiuchi . .	Sk.	32.2	34.8	36.3	42.6	44.6	46.7	52.9	54.5	57.0	52 44.62	− 0.33	−61.22	−61.15	16 51 43.14	+ 0.11
	16	α^1 Herculis . .	Sk.	. .	. .	52.1	54.2	56.3	58.4	0.6	. .	. .	9 56.32	− 0.35	−61.10	−61.15	17 8 54.82	− 0.03
	17	Venus I, N. . .	Sk.	31.7	34.5	36.1	43.2	45.4	47.6	54.3	56.1	59.0	29 45.32	− 0.45	. .	−61.15	17 28 43.72	+ 2.27
	18	Venus S. . . .	Sk.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	19	μ Herculis . .	Sk.	19.5	22.5	24.3	31.0	33.3	35.6	42.6	44.4	47.2	42 33.38	− 0.20	−61.13	−61.15	17 41 31.97	− 0.02
	20	δ Ursæ Minoris .	F.	55.5	37.5	3.0	. .	. .	. .	. .	. .	. .	13 21.80	+ 2.75	. .	−61.33	18 12 23.22	− 0.01
	21	δ Ursæ Minoris .	Sk.	. .	. .	. .	16.0	. .	58.0	31.0	. .	. .	13 21.83	+ 2.75	. .	−61.16	18 12 23.42	+ 0.19
	22	α Lyræ . . .	Sk.	. .	. .	. .	. .	. .	46.9	52.2	54.2	57.4	33 41.71	− 0.21	−61.16	−61.16	18 32 40.34	+ 0.02
	23	B. A. C. 262 .	F.	58.2	16.8	10.5	16.9	2.4	29.7	35.3	48.0	7.6	53 2.82	+ 2.37	. .	−61.38	0 52 3.81	−12.06
	24	ε Piscium . .	F.	16.8	19.4	20.8	27.0	29.1	31.2	37.4	39.0	41.5	57 29 13	− 0.36	−61.37	−61.38	0 56 27.39	+ 0.01
	25	Polaris	F.	. .	. .	8.0	35.0	2.0	31.0	35 0	. .	. .	14 2.20	+ 8.50	. .	−61.38	1 13 9.41	− 1.48
	26	θ^1 Ceti. . . .	F.	36.2	38.8	40.3	46.5	48.6	50.7	56.9	58.4	1.0	18 48.60	− 0.42	−61.40	−61.38	1 17 46.80	+ 0.04
	27	η Piscium . . .	F.	36.8	39.5	41.0	47.5	49.6	51.7	58.0	59.5	2.0	25 49.51	− 0.37	−61.37	−61.38	1 24 47.80	+ 0.00
	28	Hygeia	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	29	α Ceti (R.) . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	30	δ Persei (R.) . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
28	31	ε Piscium . . .	E.	17.0	19.7	21.3	27.4	29.5	31.6	37.7	39.3	41.8	57 29.48	− 0.51	−61.50	−61.57	0 56 27.40	+ 0.04
	32	Polaris	E.	14.5	21.1	11.0	39.0	6.0	31.0	56.5	. .	. .	14 5.04	+ 6.52	. .	−61.58	1 13 10.00	− 0.23
	33	θ^1 Ceti. . . .	E.	. .	. .	44.7	16.8	48.9	51.0	53.1	. .	. .	18 48.90	− 0.57	−61.57	−61.58	1 17 46.75	+ 0.01
	34	38 Cassiopeæ . . .	E.	24.3	31.6	36.0	53.8	59.8	5.7	23.0	27.5	35.0	22 59.63	− 0.04	. .	−61.58	1 21 57.99	+ 0.38
	35	η Piscium . . .	E.	37.2	39.8	41.4	47.8	49.9	52.0	58.4	59.9	2.6	25 49.89	− 0.48	−61.60	−61.58	1 24 47.83	+ 0.09
	36	ο Piscium . . .	E.	37.5	39.9	41.6	47.8	49.9	51.9	58.1	59.7	2.3	39 19.86	− 0.50	−61.55	−61.58	1 38 47.88	+ 0.04
	37	β Arietis	E.	35.8	37.5	41.8	44.2	46.3	48.4	50.7	55.0	56.7	48 46.27	− 0.47	−61.46	−61.58	1 47 44.22	− 0.10
	38	Neptune . . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	39	α Arietis	E.	56.7	59.4	1.0	7.8	10.0	12.2	18.8	20.5	23.3	1 9.97	− 0.45	−61.60	−61.58	2 0 7.94	+ 0.03
	40	ξ^1 Ceti. . . .	E.	12.5	15.1	16.7	22.9	25.0	27.1	33.2	34.7	37.5	7 24.97	− 0.51	−61.67	−61.59	2 6 22.87	+ 0.12
	41	Diana	E.	57.9	59.8	4.0	6.9	9.2	11.5	14.0	18.6	20.5	28 9.16	− 0.43	. .	−61.59	2 27 7.14	. .
29	42	Polaris, S. P. .	S.	. .	. .	21.5	53.0	25.0	0.0	34.5	. .	. .	14 26.80	−16.65	. .	−62.08	1 13 8.07	− 1.11
	43	α Bootis	S.	45.3	47.9	49.5	56.2	58.3	0.6	7.0	8.6	11.3	10 58.30	− 0.25	−62.09	−62.10	14 9 55.95	− 0.01
	44	ε Bootis	S.	18.4	21.3	23.0	30.0	32.2	34.6	41.5	43.2	46.1	40 32.26	− 0.19	−62.12	−62.10	14 39 29.97	0.00
30	45	Sun I, S. . . .	S.	9.4	12.2	13.8	20.4	22.7	24.9	31.3	32.9	35.8	26 22.60	− 0.49	. .	−62.13	16 25 19.98	. .
	46	Sun II, N. . . .	S.	29.9	32.6	34.3	41.0	43.3	45.5	52.1	53.6	56.3	28 43.18	− 0.49	. .	−62.13	16 27 40.56	. .
	47	Venus I, N. . .	S.	11.3	14.1	16.0	22.8	25.0	27.2	33.9	35.7	38.3	24 24.92	− 0.51	. .	−62.14	17 23 22.30	+ 2.32
	48	Venus S. . . .	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
Dec. 1	49	β Ceti.	Sk.	9.0	11.7	13.3	19.8	22.0	24.2	30.7	32.3	35.0	38 22.00	− 0.50	−62.42	−62.39	0 37 19.02	+ 0.08
	50	Polaris	Sk.	13.0	3.5	8.5	28.5	54.0	. .	. .	. .	. .	13 53.50	+17.03	. .	−62.40	1 13 8.13	+ 0.01

1, Observed for Dione. Wire A used.
2. Observed for Io. Wire A used.
23. Bisections at sets B and D.
50. Bisections at wires B_1, B_2, and B_3.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	341 44	10 17.5	1.5	25.0	1.3	31	. .	920	. .	974	. .	76.4	18 8 45.8	. .	+ 19.9	69 15 26.9	. .
2	329 50	19.0	2.8	27.1	2.8	31	. .	. .	. .	470	464	76.4	30 2 40.2	. .	+ 35.2	81 9 36.6	. .
3	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. . .	. .
4	339 56	22.0	6.5	28.5	4.2	30	. .	690	. .	698	. .	76.4	19 59 3.7	. .	+ 22.1	71 5 47.0	+ 1.2
5	335 34	17.1	0.3	23.7	0.5	31	. .	716	. .	718	. .	76.4	24 21 14.4	. .	+ 27.5	75 28 3.1	— 2.3
6	337 18	13.6	26.3	19.9	27.4	33	. .	796	. .	800	. .	76.4	22 37 42.7	. .	+ 25.4	73 44 29.3	+ 0.9
7	340 4	10.3	25.1	18.6	27.7	34	. .	165	. .	138	. .	75.4	19 51 42.5	37.5	+ 22.0	70 58 25.7	— 2.9
8	340 52	13.4	28.7	21.1	21.0	31	. .	. .	. .	995	970	75.4	19 3 13.3	. .	+ 20.9	70 9 55.4	— 1.0
9	348 38	13.8	0.9	24.0	28.3	32	231	243	. .	. .	. .	75.4	11 17 20.0	. .	+ 12.1	62 23 53.3	— 0.4
10	305 32	3.5	20.0	13.9	20.6	33	. .	. .	. .	185	180	75.4	54 23 25.0	. .	+ 1 24.0	105 31 10.2	— 0.1
11	306 54	6.3	25.3	17.7	23.1	38	563	625	. .	. .	. .	75.4	53 2 50.5	. .	+ 1 19.9	104 10 31.6	. .
12	306 54	6.3	25.3	17.7	23.1	38	. .	. .	. .	072	038	75.4	53 2 43.0	. .	+ 1 19.9	104 10 24.1	. .
13	299 36	17.5	2.5	26.4	1.4	37	362	480	. .	. .	. .	75.4	60 20 41.8	. .	+ 1 44.2	111 28 47.2	. .
14	300 8	7.2	23.0	17.2	23.9	36	. .	. .	. .	190	226	75.4	59 48 14.4	48.2	+ 1 42.0	110 56 17.6	. .
15	330 38	14.1	1.8	24.9	29.0	38	160	172	. .	. .	. .	75.4	29 18 51.3	. .	+ 33.3	80 25 45.8	+ 0.2
16	335 34	12.8	29.5	22.9	28.4	31	. .	. .	. .	672	650	75.4	24 21 10.9	50.5	+ 26.8	75 27 58.9	+ 1.2
17	295 16	14.6	3.6	25.8	0.7	31	480	362	. .	. .	. .	75.4	64 39 8.9	. .	+ 2 4.2	115 47 34.3	. .
18	295 16	14.6	3.6	25.8	0.7	35	. .	. .	. .	022	122	75.4	64 40 5.5	. .	+ 2 4.3	115 48 31.0	. .
19	348 50	5.0	24.0	17.0	17.5	34	572	566	. .	. .	. .	75.4	11 5 47.3	. .	+ 11.6	62 12 20.1	+ 2.2
20	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. . .	. .
21	47 38	19.0	6.0	28.3	0.5	35	. .	480	. .	. .	435	75.4	312 18 13.7	. .	— 1 4.8	3 23 30.1	— 1.7
22	359 42	11.2	28.5	22.7	24.9	33	. .	. .	. .	100	080	75.4	0 13 31.5	52.2	+ 0.2	51 19 52.9	0.0
23	46 36	23.8	9.3	1.0	4.7	31	. .	800	. .	796	. .	74.5	313 19 20.9	. .	— 1 4.4	4 24 37.7	+33.1
24	328 16	22.2	6.5	29.1	5.2	34	. .	. .	. .	170	178	74.5	31 39 55.8	. .	+ 37.5	82 46 54.5	— 2.7
25	49 40	13.2	26.4	19.2	24.7	35	184	190	200	205	200	74.5	310 16 1.3	36.9	— 1 11.7	1 21 10.8	— 2.2
26	312 14	23.5	7.1	0.8	6.6	35	. .	356	. .	360	. .	74.5	47 42 14.7	. .	+ 1 6.8	98 49 42.7	— 1.3
27	335 44	20.9	5.9	29.5	5.0	30	756	760	. .	. .	. .	74.5	24 11 2.4	. .	+ 27.3	75 17 50.9	— 0.2
28	341 10	15.9	29.6	22.1	29.0	31	. .	626	. .	664	. .	74.5	18 45 10.1	. .	+ 20.7	69 51 52.0	— 1.1
29	215 14	24.4	9.5	3.6	5.0	38	. .	292	. .	282	. .	74.5	144 43 0.7	. .	— 43.0	86 24 3.5	+ 2.2
30	171 26	26.3	10.7	3.4	7.6	32	. .	. .	. .	430	414	74.5	188 29 32.0	36.0	+ 9.1	42 36 40.1	— 2.6
31	328 16	20.8	7.0	29.2	3.2	34	. .	400	. .	350	. .	76.4	31 39 59.6	48.5	+ 36.0	82 46 56.8	— 0.4
32	49 40	15.8	29.0	25.0	24.8	34	730	. .	690	. .	780	76.4	310 15 58.9	. .	— 1 8.9	1 21 11.2	— 1.5
33	312 14	19.0	3.5	27.0	2.0	35	. .	. .	. .	850	840	76.4	47 42 20.2	. .	+ 1 4.2	98 49 45.6	+ 1.7
34	30 38	11 1.4	15.8	9.7	9.7	29	. .	010	. .	980	. .	76.4	329 16 47.2	. .	— 34.7	20 22 33.9	+ 0.2
35	335 44	10 17.1	1.7	25.0	29.3	31	. .	075	. .	035	. .	76.4	24 11 4.6	. .	+ 26.2	75 17 52.0	+ 0.9
36	329 34	11.8	29.0	23.0	27.1	32	. .	285	. .	280	. .	76.4	30 21 20.3	. .	+ 34.2	81 28 15.7	+ 0.1
37	341 14	19.8	3.5	26.8	29.2	32	. .	455	. .	430	. .	76.4	18 41 27.4	. .	+ 19.8	69 48 8.4	+ 2.2
38	330 18	25.0	11.3	2.8	7.7	33	. .	. .	. .	850	830	76.4	29 37 56.0	. .	+ 33.2	80 44 50.4	. .
39	343 54	17.0	5.0	28.1	5.5	30	. .	700	. .	690	. .	76.4	16 1 2.3	. .	+ 16.8	66 7 40.3	+ 1.9
40	329 18	22.4	9.6	3.0	5.8	31	. .	955	. .	930	. .	76.4	30 37 25.0	. .	+ 34.5	81 44 20.7	— 0.7
41	350 34	20.8	7.5	29.8	2.5	28	. .	360	. .	210	. .	76.4	9 20 26.6	. .	+ 9.6	60 26 57.4	— 1.0
42	52 22	13.0	27.3	20.5	25.0	34	. .	108	123	138	. .	77.0	307 33 47.8	26.3	— 1 20.3	358 38 48.7	+ 0.9
43	340 54	3.5	20.8	13.2	19.6	40	. .	. .	. .	200	246	77.0	19 3 14.6	. .	+ 21.4	70 9 57.2	0.0
44	348 38	7.8	24.0	17.2	23.8	32	. .	564	. .	506	. .	77.0	11 17 20.4	. .	+ 12.4	62 23 54.0	— 0.6
45	299 6	1.0	17.7	12.7	16.3	32	811	833	. .	. .	. .	77.0	60 51 18.0	28.2	+ 1 50.4	111 59 29.6	. .
46	299 38	16.0	2.0	28.8	4.3	37	. .	. .	. .	523	629	77.0	60 18 46.9	. .	+ 1 48.0	111 26 56.1	. .
47	296 0	16.6	3.5	25.5	2.5	34	123	. .	. .	. .	207	77.0	63 55 53.7	. .	+ 2 5.5	115 4 20.4	. .
48	296 0	16.6	3.5	25.5	2.5	38	. .	062	. .	998	. .	77.0	63 56 53.0	28.6	+ 2 5.5	115 5 19.7	. .
49	302 24	10.1	23.6	16.7	24.5	37	. .	142	. .	110	. .	78.0	57 32 31.8	29.6	+ 1 36.1	108 40 29.1	+ 0.1
50	49 40	6.5	18.9	13.0	16.2	35	240	304	350	. .	. .	78.0	310 16 1.1	. .	— 1 12.2	1 21 10.1	— 1.8

No.	Barom.	At. Ther.
	in.	°
7	30.50	36.5
14	30.50	44.2
16	30.47	46.0
22	30.48	50.0
25	30.48	40.5
30	30.46	41.0
31	30.000	50.0
42	30.30	27.0
45	30.37	29.0
49	30.25	32.1

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
11	— 7.8	— 3.8	. ..	— 11.6
12	— 7.8	+ 3.8	— 0.1	— 4.1
13	— 7.8	— 16 14.8	. .	— 16 22.6
14	— 7.8	+ 16 14.8	. .	+ 16 7.0
17	— 28.2	+ 28.4	. .	+ 0.2
18	— 28.2	— 28.4	+ 0.1	— 56.5
38	— 0.1	. .	. .	— 0.1
45	— 7.8	— 16 16.7	. .	— 16 24.5
46	— 7.7	+ 16 16.7	. .	+ 16 9.0
47	— 28.8	+ 29.8	. .	+ 1.0
48	— 28.8	— 29.8	+ 0.3	— 58.3

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Dec. 1	1	θ^1 Ceti. . . .	Sk.	37.2	39.8	41.3	47.6	49.8	51.8	58.0	59.6	2.0	18 49.68	− 0.52	−62.39	−62.40	1 17 46.76	+ 0.01
	2	o Piscium (R.) . .	Sk.	. .	. .	46.3	48.3	50.3	52.4	54.5	. .	. .	39 50.36	− 0.13	. .	−62.40	1 38 47 83	− 0.01
	3	Neptune . . .	Sk.	. .	. .	. .	. .	. .	. .	17.0	18.4	. .	49 8.64	− 0.41	. .	−62.41	1 48 5.82	. .
	4	α Arietis . . .	Sk.	57.3	0.1	1.7	. .	. .	. .	. .	. .	. .	1 10.60	− 0.31	−62.38	−62.41	2 0 7.88	− 0.02
	5	α Persei (R.) . .	Sk.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
2	6	γ Pegasi . . .	E.	38.6	41.4	43.0	49.3	51.5	53.6	59.9	1.5	4.3	7 51.46	− 0.64	−63.18	−63.04	0 6 47.78	+ 0.14
	7	κ Draconis, S. P. .	E.	48.6	40.9	36.4	18.0	11.9	6.0	47.4	43.0	35.7	29 11.99	− 1.60	. .	−63.04	12 28 7.35	− 0.11
	8	α Cassiopeæ. . .	E.	6.3	10.9	13.6	24.5	28.2	32.0	42.8	45.5	50.0	34 28.20	− 0.23	. .	−63.04	0 33 24.93	− 0.07
	9	β Ceti. . . .	E.	10.0	12.6	14.3	20.8	23.0	25.1	31.5	33.2	35.9	38 22.93	− 0.84	−63.11	−63.04	0 37 19.05	+ 0.12
	10	32^1 Camelopard., S. P.	E.	. .	. .	50.8	30.7	10.9	51.5	31.3	. .	. .	49 11.04	− 3.80	. .	−63.04	12 48 4.20	− 7.96
	11	32^2 Camelopard., S. P.	E.	. .	. .	57.7	38.0	18.5	59.4	38.8	. .	. .	49 18.44	− 3.80	. .	−63.04	12 48 11.60	− 0.56
	12	ε Piscium . . .	E.	18.8	21.4	22.8	29.0	31.1	33.2	39.3	40.9	43.4	57 31.10	− 0.68	−63.05	−63.04	0 56 27.38	+ 0.03
	13	Polaris. . . .	E.	. .	. .	3.5	30.0	57.5	23.5	51.0	. .	. .	13 57.10	+12.91	. .	−63.05	1 13 6.96	− 0.49
	14	θ^1 Ceti. . . .	E.	38.2	40.8	42.4	48.5	50.6	52.7	58.9	0.4	3.0	18 50.61	− 0.78	−63.07	−63.05	1 17 46.78	+ 0.04
	15	38 Cassiopeæ. . .	E.	25.2	32.8	37.0	54.5	0.6	6.6	24.0	28.5	35.7	23 0.54	+ 0.16	. .	−63.05	1 21 57.65	+ 0.18
	16	η Piscium . . .	E.	38.8	41.4	43.0	49.4	51.5	53.6	59.9	1.6	4.2	25 51.49	− 0.63	−63.06	−63.05	1 24 47.81	+ 0.08
	17	o Piscium . . .	E.	39.0	41.6	43.0	49.5	51.5	53.7	59.8	1.4	3.9	39 51.49	− 0.67	−63.02	−63.05	1 38 47.77	− 0.06
	18	β Arietis . . .	E.	34.9	37.6	39.2	43.5	45.7	48.0	. .	. .	. .	48 47.92	− 0.60	−62.99	−63.05	1 47 44.27	− 0.04
	19	Neptune . . .	E.	. .	. .	. .	. .	. .	. .	13.2	14.8	17.4	49 4.96	− 0.67	. .	−63.05	1 48 1.24	. .
	20	α Arietis . . .	E.	. .	. .	. .	. .	. .	. .	20.3	21.9	24.8	1 11.44	− 0.58	−62.95	−63.05	2 0 7.81	− 0.09
	21	ξ^1 Ceti. . . .	E.	14.2	16.7	18.3	24.5	26.5	28.6	34.7	36.3	38.9	7 26.52	− 0.67	−63.08	−63.05	2 6 22.80	+ 0.07
	22	ι Cassiopeæ. . .	E.	20.2	26.6	30.5	46.0	51.2	56.5	12.1	16.0	22.3	19 51.28	+ 0.13	. .	−63.06	2 18 48.35	+ 0.42
	23	5 Ursæ Minoris, S. P.	E.	. .	. .	8.0	59.5	50.6	42.0	33.5	. .	. .	28 50.72	− 2.01	. .	−63.06	14 27 45.65	− 0.25
	24	γ Ceti. . . .	E.	41.4	44.0	45.5	51.6	53.7	55.7	1.8	3.3	5.8	37 53.64	− 0.71	−63.04	−63.06	2 36 49.87	− 0.02
	25	Pallas	E.	. .	. .	4.0	6.4	8.8	11.1	13.4	. .	. .	39 8.74	− 0.92	. .	−63.06	2 38 4.76	. .
	26	Juno	E.	. .	. .	32.0	34.0	36.2	38.6	42.8	44.1	46.3	48 34.23	− 0.76	. .	−63.06	2 47 30.41	. .
	27	α Ceti. . . .	E.	. .	. .	47.0	49.0	51.0	52.9	57.2	58.7	0.9	56 48.91	− 0.69	−62.97	−63.06	2 55 45.16	− 0.07
4	28	Sun I, S. . . .	S.	30.5	33.3	34.9	41.6	43.7	45.9	52.5	54.4	57.0	43 43.76	− 0.79	. .	−63.27	16 42 39.70	. .
	29	Sun II, N. . . .	S.	54.6	56.0	0.5	2.6	4.7	7.0	9.2	13.9	15.4	46 4.88	− 0.79	. .	−63.27	16 45 0.82	. .
	30	ζ Aquilæ. . . .	S.	29.3	31.9	33.6	39.8	41.8	44.0	50.4	51.9	54.6	0 41.92	− 0.59	−63.29	−63.28	18 59 38.05	+ 0.09
	31	γ Aquilæ. . . .	S.	8.9	11.3	12.9	19.1	21.1	23.3	29.5	31.1	33.5	41 21.19	− 0.61	−63.27	−63.28	19 40 17.30	+ 0.02
	32	α Aquilæ. . . .	S.	30.9	33.6	35.0	41.2	43.3	45.3	51.4	53.0	55.7	45 43.27	− 0.62	−63.29	−63.28	19 44 39.37	+ 0.05
	33	Polaris. . . .	F.	. .	. .	2.5	29.0	56.5	23.0	49.5	. .	. .	13 56.10	+13.32	. .	−63.24	1 13 6.18	− 0.04
	34	θ^1 Ceti. . . .	F.	38.3	40.8	42.5	48.6	50.7	52.8	59.0	0.5	3.0	18 50.69	− 0.66	−63.28	−63.24	1 17 46.70	+ 0.06
	35	o Piscium . . .	F.	39.1	41.8	43.3	49.5	51.6	53.8	59.9	1.4	4.0	39 51.60	− 0.57	−63.24	−63.25	1 38 47.78	− 0.04
	36	Neptune . . .	F.	44.0	46.7	48.3	54.4	56.5	58.7	4.9	6.5	9.0	48 56.56	− 0.57	. .	−63.25	1 47 52.74	. .
	37	ξ^1 Ceti. . . .	F.	14.3	16.7	18.3	24.6	26.6	28.6	34.8	36.5	38.9	7 26.59	− 0.57	−63.25	−63.25	2 6 22.77	+ 0.04
	38	Pallas	F.	51.1	54.0	55.7	2.5	4.9	7.3	14.3	16.0	18.9	38 4.97	− 0.78	. .	−63.25	2 37 0.94	. .
	39	Juno	F.	44.2	46.9	48.5	54.5	56.5	58.6	4.7	6.2	8.7	47 56.53	− 0.65	. .	−63.25	2 46 52.63	. .
	40	B. A. C. 960 . .	F.	. .	. .	28.0	49.9	10.5	31.8	52.4	. .	. .	4 10.52	+ 2 73	. .	−63.25	3 3 10.00	−18.61
	41	η Tauri	F.	54.0	57.0	58.5	5.3	7.5	9.8	16.5	18.0	21.0	41 7.51	− 0.48	−63.21	−63.26	3 40 3.77	− 0.05
	42	ζ Persei	F.	6.3	9.4	11.2	18.6	20.9	23.2	30.0	32.4	35.3	47 20.88	− 0.42	−63.33	−63.26	3 46 17.20	− 0.06
	43	γ^1 Eridani . . .	F.	4.0	6.5	8.2	14.4	16.5	18.7	25.0	26.6	29.2	53 16.57	− 0.69	−63.20	−63.26	3 52 12.62	− 0.02
	44	Io	F.	36.3	39.1	40.7	47.0	49.0	51.1	56.9	58.5	1.3	59 48.88	− 0.57	. .	−63.26	3 58 45.05	. .
	45	Terpsichore . .	F.	24.2	27.4	29.3	. .	. .	. .	49.0	50.9	53.8	3 39.10	− 0.40	. .	−63.26	4 2 35.54	. .
	46	Anonymous . .	F.	. .	. .	37.2	39.7	41.9	44.6	46.9	. .	. .	3 42.06	− 0.40	. .	−63.26	4 2 38.40	− 4.39
	47	Vesta	F.	12.7	14.2	18.5	20.6	22.6	24.8	26.8	31.0	32.6	17 22.64	− 0.54	. .	−63.26	4 16 18.84	. .
	48	IX, 9	S.	34.3	37.0	38.9	46.2	48.7	51.3	58.3	0.2	3.1	50 48.67	− 0.75	. .	−63.29	9 49 44.63	− 2.22
	49	ρ Leonis	S.	4.4	7.0	8.8	15.0	17.1	19.1	25.4	26.9	29.5	27 17.02	− 0.50	−63.26	−63.30	10 26 13.22	− 0.11

7. Bisections at sets B and D.
10, 11. Bisections at set C.
40. Bisections at sets B and D.
44, 45, 46. Wire A used.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	312 14	10 5.8	18.9	13.3	19.9	36	. .	450	. .	435	. .	78.0	47 42 17.2	. .	+ 1 7.2	98 49 45.6	+ 1.2
2	210 18	7.0	22.0	16.5	19.5	37	900	960	. .	. .	842	78.0	149 38 41.2	. .	— 35.8	81 28 15.8	+ 0.2
3	330 18	11.4	24.0	18.3	24.2	39	. .	178	. .	. .	. .	78.0	29 39 4.7	. .	+ 34.8	80 46 0.7	. .
4	343 54	9 28.3	13.1	3.0	11.6	31	762	. .	. .	. .	759	78.0	16 0 58.6	30.5	+ 17.6	67 7 37.4	— 0.9
5	169 26	10 16.3	1.3	24.4	28.4	39	575	530	. .	420	468	78.0	190 31 14.0	30.0	+ 11.4	40 34 55.8	— 2.7
6	335 32	16.5	1.3	24.8	0.1	34	. .	030	. .	010	. .	76.7	24 23 50.2	47.0	+ 26.7	75 30 38.1	+ 0.6
7	70 30	21.0	6.3	27.5	2.5	29	825	. .	. .	. .	800	76.7	289 24 49.1	. .	— 2 45.8	340 28 24.5	— 0.2
8	16 52	20.0	5.4	28.5	0.7	29	. .	035	. .	050	. .	76.7	343 2 37.4	. .	— 18.0	34 8 40.6	— 1.3
9	302 24	21.5	7.0	29.6	4.0	36	. .	700	. .	650	. .	76.7	57 32 35.5	. .	+ 1 32.5	108 40 29.2	+ 0.1
10	56 56	24.5	11.1	2.8	5.3	37	130	. .	. .	. .	105	76.7	303 0 45.2	. .	— 1 30.6	354 5 35.8	+19.1
11	56 56	24.5	11.1	2.8	5.3	35	950	. .	. .	. .	955	76.7	303 0 27.4	. .	— 1 30.6	354 5 18.0	+ 1.3
12	328 16	21.5	7.3	2.3	7.1	34	. .	191	. .	175	. .	76.7	31 39 59.0	. .	+ 36.4	82 46 56.6	— 0.8
13	49 40	14.9	0.0	24.3	25.9	34	695	. .	725	. .	690	76.7	310 15 59.0	. .	— 1 9.6	1 21 10.6	— 1.0
14	312 14	21.5	4.8	29.8	5.8	35	. .	750	. .	740	. .	76.7	47 42 21.3	. .	+ 1 4.9	98 49 47.4	+ 2.9
15	30 38	28.8	15.5	9.1	10.5	28	. .	915	. .	975	. .	76.7	329 16 46.1	. .	— 35.1	20 22 32.2	— 0.7
16	335 44	19.5	4.1	27.2	3.3	30	. .	865	. .	835	. .	76.7	24 11 4.5	. .	+ 26.6	75 17 52.3	+ 1.2
17	329 34	21.2	9.3	2.5	6.2	31	. .	575	. .	565	. .	76.7	30 21 19.3	. .	+ 34.6	81 28 15.1	— 0.6
18	341 14	22.0	5.8	29.5	1.5	32	195	185	. .	. .	. .	76.7	18 41 26.0	. .	+ 20.0	69 48 7.2	+ 1.1
19	330 16	25.4	9.8	5.6	9.8	31	. .	. .	. .	950	940	76.7	29 39 28.3	. .	+ 33.7	80 46 23.2	. .
20	343 54	19.3	6.0	29.5	2.0	30	. .	440	. .	430	. .	76.7	16 0 58.9	. .	+ 17.0	67 7 37.1	— 1.2
21	329 18	24.0	9.2	4.2	7.5	31	. .	880	. .	855	. .	76.7	30 37 25.3	. .	+ 35.0	81 44 21.5	— 0.1
22	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
23	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
24	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
25	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
26	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
27	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
28	298 30	9 19.1	10.5	6.5	9.0	37	630	686	. .	. .	. .	74.5	61 26 21.3	47.6	+ 1 48.5	112 34 31.0	. .
29	299 2	10 7.5	25.0	19.4	24.2	34	. .	. .	. .	875	835	74.5	60 53 54.0	. .	+ 1 46.1	112 2 1.3	. .
30	334 44	18.0	6.4	27.4	2.8	36	. .	487	. .	447	. .	74.5	25 12 28.4	. .	+ 28.0	76 19 17.6	— 1.2
31	331 22	21.5	9.1	3.8	7.0	36	. .	592	. .	542	. .	74.5	28 34 34.1	. .	+ 32.4	79 41 27.7	+ 0.5
32	329 36	27.8	15.4	8.8	13.7	36	. .	854	. .	826	. .	74.5	30 20 44.4	47.1	+ 34.8	81 27 40.4	— 0.8
33	49 40	11 0.7	12.0	8.5	11.6	33	812	812	816	816	844	77.7	310 16 0.6	34.2	— 1 12.0	1 21 9.8	— 1.3
34	312 14	10 23.2	5.2	29.0	5.7	35	. .	388	. .	374	. .	77.7	47 42 17.0	. .	+ 1 7.0	98 49 45.2	+ 0.5
35	329 34	11 0.1	13.5	7.8	14.1	31	. .	010	. .	012	. .	77 7	30 21 18.3	. .	+ 35.8	81 28 15.3	— 0.5
36	330 16	10 18.0	0.7	23.0	1.6	35	. .	074	. .	074	. .	77.7	29 40 7.4	. .	+ 34.8	80 47 3.4	. .
37	329 18	20.8	4.6	29.0	5.0	31	. .	898	. .	900	. .	77.7	30 37 22.9	. .	+ 36.2	81 44 20.3	— 1.4
38	292 40	10.2	21.8	14.1	23.6	34	. .	950	. .	786	. .	77.7	67 15 55.7	32.1	+ 2 25.4	118 24 42.3	— 4.6
39	315 12	18.5	1.7	25.5	2.4	35	. .	636	. .	600	. .	77.7	44 44 16.9	. .	+ 1 0.7	95 51 38.8	— 5.5
40	45 30	16.2	27.5	22.5	26.8	37	. .	550	. .	540	. .	77.7	314 26 43.0	. .	— 1 2.5	5 32 1.7	+26.3
41	344 46	15.4	27.7	20.8	27.1	35	. .	664	. .	662	. .	77.7	15 10 13.5	. .	+ 16.6	66 16 51.3	+ 1.0
42	352 34	15.4	29.4	25.5	0.2	37	. .	556	. .	568	. .	77.7	7 22 45.0	. .	+ 7.9	58 29 14.1	+ 1.3
43	307 12	11.6	24.2	17.6	26.2	35	. .	590	. .	536	. .	77.7	52 44 8.9	. .	+ 1 20.6	103 51 50.7	+ 1.3
44	329 6	21.2	6.7	0.4	6.3	36	. .	826	. .	812	. .	77.7	30 48 6.5	. .	+ 36.6	81 55 4.3	— 2.6
45	354 38	19.2	2.7	27.4	2.2	35	. .	. .	. .	608	. .	77.7	5 15 44.9	. .	+ 5.7	56 22 1.8	— 0.6
46	354 38	19.2	2.7	27.4	2.2	33	. .	. .	. .	. .	608	77.7	5 15 14.7	. .	+ 5.7	56 21 41.6	+19.1
47	335 32	15.1	27.8	22.4	27.0	32	600	620	. .	612	600	77.7	24 23 27.0	31.3	+ 27.9	75 30 16.1	— 2.3
48	288 0	6.8	23.1	16.1	24.1	35	. .	584	. .	420	. .	77.1	71 56 4.9	. .	+ 3 9.0	123 5 35.1	+ 3.1
49	331 0	20.8	5.2	0.1	5.7	34	. .	205	. .	163	. .	77.1	28 55 57.9	24.0	+ 34.4	80 2 53.5	— 3.0

No.	Barom.	At. Ther.
	in.	°
4	30.23	32.4
5	30.23	32.5
6	30.14	50.0
28	30.35	46.5
33	30.41	37.5
38	30.43	36.5
47	30.43	35.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
3	— 0.1	. .	. .	— 0.1
19	— 0.1	. .	. .	— 0.1
28	— 7.9	— 16 14.8	. .	— 16 22.7
29	— 7.8	+ 16 14.8	. .	+ 16 7.0
36	— 0.1	. .	. .	— 0.1

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Dec. 4	1	α Ursæ Majoris . .	S.	36.7	42.2	45.5	58.4	3.0	7.4	20.8	24.3	29.5	57 3.09	+ 0.11	. .	−63.30	10 55 59.90	− 0.08
	2	δ Leonis	S.	17.5	20.0	21.9	28.4	30.7	33.0	39.5	41.0	43.9	8 30.66	− 0.43	−63.31	−63.30	11 7 26.93	− 0.05
	3	δ Crateris . . .	S.	. .	. .	6.5	8.7	10.8	13.0	17.0	18.7	21.2	14 8.66	− 0.63	−63.38	−63.30	11 13 4.73	+ 0.06
	4	12 Canum Venat. .	S.	57.6	0.7	2.6	7.9	13.1	18.5	23.6	25.7	28.9	51 13.18	− 0.28	−63.24	−63.31	12 50 9.59	− 0.07
	5	Polaris, S. P. . .	S.	. .	. .	20.0	53.0	22.5	. .	33.5	. .	. .	14 25.82	−16.30	. .	−63.31	1 13 6.21	+ 0.27
	6	α Bootis	Sk.	46.7	49.5	51.1	57.5	59.7	1.9	8.5	10.0	12.7	10 59.73	− 0.52	−63.13	−63.09	14 9 56.12	+ 0.04
	7	Moon II . . .	Sk.	19.0	21.8	23.5	29.9	32.0	34.2	40.6	42.3	45.0	15 32.03	− 0.83	. .	−63.09	14 14 28.11	−62.88
	8	ϵ Bootis	Sk.	19.9	22.8	24.2	31.5	33.7	36.0	42.8	44.6	47.5	40 33.67	− 0.44	−63.17	−63.09	14 39 30.14	+ 0.06
5	9	Sun I, S. . . .	Sk.	52.3	54.8	56.4	3.2	5.4	7.4	14.2	15.7	18.8	48 5.36	− 0.91	. .	−63.11	16 47 1.34	. .
	10	Sun II, N. . . .	Sk.	13.1	16.0	17.5	24.3	26.4	28.6	35.2	36.8	39.5	50 26.38	− 0.91	. .	−63.11	16 49 22.36	. .
	11	β Ceti.	Sk.	9.8	12.7	14.3	20.7	23.0	25.1	31.6	33.1	35.8	38 22.90	− 0.88	−63.07	−63.17	0 37 18.85	− 0.05
	12	Polaris	Sk.	11.5	0.0	0.0	54.5	22.5	49.5	11.5	40.0	. .	13 47.91	+21.38	. .	−63.17	1 13 6.12	+ 0.47
	13	θ^1 Ceti	Sk.	38.3	40.9	42.4	48.6	50.7	52.7	58.9	0.4	3.0	18 50.66	− 0.79	−63.13	−63.17	1 17 46.70	− 0.02
	14	o Piscium (R.) . .	Sk.	. .	. .	47.0	49.1	51.2	53.3	55.4	. .	. .	39 51.20	− 0.17	. .	−63.17	1 38 47.86	+ 0.04
	15	Neptune . . .	Sk.	39.9	42.4	43.9	50.1	52.3	54.4	0.6	2.2	4.9	48 52.30	− 0.63	. .	−63.17	1 47 48.50	. .
	16	Juno	Sk.	28.0	30.4	31.9	38.0	40.2	42.3	48.4	50.0	52.6	47 40.20	− 0.76	. .	−63.19	2 46 36.25	. .
	17	η Tauri	Sk.	. .	. .	. .	. .	9.7	12.0	16.5	18.2	20.9	41 7.55	− 0.49	−63.23	−63.20	3 40 3.86	+ 0.03
	18	ζ Persei	Sk.	6.3	9.3	11.0	18.3	20.7	23.0	30.3	32.2	35.0	47 20.68	− 0.41	−63.13	−63.20	3 46 17.07	− 0.08
	19	γ^1 Eridani. . .	Sk.	4.2	6.7	8.3	14.5	16.7	18.8	25.0	26.6	29.4	53 16.69	− 0.83	−63.17	−63.20	3 52 12.66	+ 0.01
	20	Terpsichore . .	Sk.	24.7	28.1	30.0	. .	. .	. .	. .	. .	. .	2 39.66	− 0.38	. .	−63.20	4 1 36.08	. .
	21	Vesta	Sk.	5.9	9.0	10.6	17.0	19.1	21.3	27.7	29.3	31.8	16 19.08	− 0.58	. .	−63.20	4 15 15.30	. .
	22	ϵ Tauri	Sk.	. .	. .	19.1	21.3	23.6	25.7	27.7	. .	. .	22 23.48	− 0.54	−63.26	−63.20	4 21 19.74	+ 0.05
	23	α Tauri	Sk.	36.5	39.3	40.8	47.1	49.3	51.5	57.8	59.5	2.3	29 49.34	− 0.57	−63.24	−63.21	4 28 45.56	+ 0.01
	24	Anonymous . .	Sk.	37.0	39.5	41.2	47.6	49.7	51.9	58.0	0.2	2.2	51 49.70	− 0.59	. .	−63.21	4 50 45.90	. .
7	25	Sun I, N. . . .	F.	37.3	40.2	41.7	48.5	50.7	52.9	59.4	1.1	3.9	56 50.69	− 0.86	. .	−63.84	16 55 45.99	. .
	26	Sun II, S. . . .	F.	58.9	1.5	3.3	9.9	12.1	14.4	21.0	22.6	25.4	59 12.12	− 0.86	. .	−63.84	16 58 7.42	. .
	27	Venus I, N. . .	F.	5.5	8.2	9.8	16.5	18.8	21.0	27.7	29.2	32.0	8 18.74	− 0.87	. .	−63.84	17 7 14.03	+ 2.38
	28	Venus S. . . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	29	δ Ursæ Minoris. .	F.	. .	. .	. .	. .	. .	. .	38.0	3.0	. .	13 19.50	+ 5.89	. .	−63.86	18 12 21.53	+ 0.35
	30	α Lyræ	F.	28.8	32.2	34.0	41.9	44.5	47.2	55.0	57.0	0.3	33 44.54	− 0.38	−63.88	−63.86	18 32 40.30	+ 0.01
	31	Terpsichore . .	F.	29.2	34.8	39.1	42.2	44.4	46.8	49.5	54.1	59.0	0 44.34	− 0.43	. .	−64.03	3 59 39.88	. .
	32	ϵ Tauri	F.	11.3	14.0	15.6	22.0	24.2	26.4	33.0	34.5	37.3	22 24.26	− 0.56	−64.00	−64.04	4 21 19.66	− 0.05
8	33	Sun I, S. . . .	S.	0.7	3.3	5.0	11.7	14.0	16.1	22.8	24.5	27.0	1 13.60	− 0.62	. .	−64.29	17 0 8.99	. .
	34	Sun II, N. . . .	S.	22.3	25.1	26.7	33.5	35.7	37.9	44.6	46.2	48.9	3 35.66	− 0.62	. .	−64.29	17 2 30.75	. .
	35	γ Aquilæ. . . .	S.	9.7	12.3	13.8	20.0	22.0	24.2	30.4	31.9	34.5	41 22.09	− 0.48	−64.32	−64.34	19 40 17.27	+ 0.01
	36	α Aquilæ. . . .	S.	31.8	34.3	35.9	42.1	44.1	46.3	52.5	54.0	56.5	45 44.17	− 0.49	−64.34	−64.34	19 44 39.34	+ 0.01
	37	γ^1 Ceti. . . .	S.	42.5	45.1	46.5	. .	. .	. .	2.9	4.4	7.0	37 54.73	− 0.43	−64.41	−64.48	2 36 49.82	− 0.07
	38	γ^2 Ceti. . . .	S.	. .	. .	50.9	53.0	55.0	57.0	59.1	. .	. .	. . .	− 0.43	. .	. .		. .
	39	α Ceti (R.) . .	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	40	48 Cephei . . .	S.	. .	. .	18.4	27.7	37.6	. .	56.2	. .	. .	5 37.28	+ 0.96	. .	−64.49	3 4 33.75	− 0.29
	41	α Persei (R.). .	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	42	δ Persei	S.	49.2	52.7	55.2	4.1	7.3	10.2	19.2	21.3	25.0	35 7.13	− 0.12	. .	−64.50	3 31 2.51	+ 0.15
	43	η Tauri	S.	55.3	58.1	59.8	6.5	8.6	10.9	17.7	19.3	22.0	41 8.69	− 0.32	−64.53	−64.50	3 40 3.87	+ 0.03
	44	ζ Persei	S.	7.5	10.5	12.3	19.5	21.9	24.4	31.5	33.3	36.4	47 21.92	− 0.26	−64.50	−64.50	3 46 17.16	− 0.01
	45	Io	S.	. .	. .	. .	31.6	33.7	35.8	39.7	41.4	44.0	56 31.60	− 0.40	. .	−64.50	3 55 26.70	. .
	46	Terpsichore . .	S.	33.6	36.6	38.6	. .	. .	. .	58.0	59.9	3.0	59 48.28	− 0.25	. .	−64.51	3 58 43.52	. .
	47	ι Aurigæ. . . .	S.	42.0	45.5	47.1	54.4	56.8	59.2	6.4	8.3	11.4	49 56.79	− 0.25	−64.59	−64.52	4 48 52.02	+ 0.03
	48	ϵ Ursæ Minoris, S. P.	S.	. .	. .	21.0	6.2	50.3	35.5	20.4	. .	. .	59 50.68	− 2.88	. .	−64.53	16 58 43.27	+ 0.08
	49	β Orionis. . . .	S.	25.4	28.0	29.4	35.7	37.6	39.8	45.9	47.4	50.0	9 37.69	− 0.48	−64.56	−64.53	5 8 32.68	+ 0.03
	50	β Tauri	S.	15.0	17.9	19.6	26.6	28.9	31.2	38.1	39.8	43.0	19 28.90	− 0.28	−64.49	−64.53	5 18 24.09	− 0.06

20, 31. Wire A used.
24. Observed for Astræa.
39. Bisections at wires V–VII.
40, 42, 48. Bisections at sets B and D.
41. Bisections at wires II–VI.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	23 28	10 18.6	4.8	28.9	1.9	37	. .	300	. .	254	. .	77.1	336 28 43.9	23.3	− 27.2	27 34 37.9	− 1.9
2	342 16	29.7	15.0	9.0	13.4	36	. .	826	. .	770	. .	77.1	17 40 46.8	. .	+ 19.9	68 47 27.9	− 0.6
3	306 58	19.0	4.5	26.7	3.4	35	. .	028	. .	050	. .	77.1	52 58 8.6	23.1	+ 1 22.7	104 5 52.5	− 2.0
4	0 2	27.7	13.0	5.7	11.0	34	. .	318	. .	282	. .	77.1	359 54 6.3	. .	− 0.1	51 0 27.4	− 1.0
5	52 22	27.0	12.3	4.4	9.9	33	. .	038	. .	088	. .	77.1	307 33 46.0	25.0	− 1 20.8	358 38 46.4	− 2.6
6	340 54	14.8	2.0	24.9	28.0	39	664	642	. .	. .	. .	77.1	19 3 15.9	. .	+ 21.2	60 9 58.3	− 0.3
7	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		31.6	. .		. .
8	348 38	0.5	15.5	10.5	12.2	31	. .	. .	. .	157	134	77.1	11 17 21.2	. .	+ 12.2	62 23 54.6	− 1.6
9	298 20	24.5	8.9	4.2	7.2	26	536	496	. .	. .	. .	77.1	61 34 3.3	. .	+ 1 50.4	112 42 14.9	. .
10	298 54	11 0.4	19.5	12.6	17.3	31	. .	. .	. .	914	875	77.1	61 1 34.8	42.2	+ 1 47.9	112 9 43.9	. .
11	302 24	10 16.2	28.1	19.5	28.4	37	. .	021	. .	980	. .	76.2	57 32 32.5	32.3	+ 1 35.7	108 40 29.4	0.0
12	49 40	7.6	20.5	14.7	18.1	35	432	. .	556	. .	470	76.2	310 16 1.9	. .	− 1 11.9	1 21 11.2	+ 0.3
13	312 14	14.1	20.4	27.5	25.8	36	. .	104	. .	968	. .	76.2	47 42 16.7	. .	+ 1 7.1	98 49 45.0	+ 0.2
14	210 18	24.5	7.6	2.0	4.9	36	720	812	. .	800	843	76.2	149 38 38.6	. .	− 35.8	81 28 18.4	+ 2.6
15	330 16	18.4	1.5	24.9	1.0	36	. .	510	. .	447	. .	76.2	29 40 28.1	. .	+ 34.8	80 47 24.1	. .
16	315 14	17.4	23.8	18.6	25.5	37	466	588	. .	. .	. .	76.2	44 42 38.5	. .	+ 1 0.4	95 50 0.1	− 5.5
17	341 46	13.5	26.5	18.3	24.3	35	890	925	. .	. .	. .	76.2	15 10 13.4	. .	+ 16.6	66 16 51.2	+ 0.9
18	352 34	18.0	2.1	26.3	0.7	37	504	458	. .	. .	. .	76.2	7 22 43.7	. .	+ 7.9	58 29 12.8	+ 0.1
19	307 12	12.5	26.1	17.7	25.3	35	670	630	. .	. .	. .	76.2	52 44 8.8	. .	+ 1 20.3	103 51 50.3	− 0.7
20	354 36	13.5	27.5	21.6	27.8	36	. .	. .	. .	. .	985	76.2	5 17 44.3	. .	+ 5.7	56 24 11.2	− 0.6
21	335 32	9.9	22.3	16.7	22.6	32	780	722	. .	. .	. .	76.2	24 23 22.2	. .	+ 27.8	75 30 11.2	− 2.3
22	339 56	16.6	1.0	22.5	28.7	30	962	972	. .	. .	. .	76.2	19 59 1.7	. .	+ 22.3	71 5 45.2	− 0.5
23	337 18	21.5	2.9	24.5	1.6	33	382	. .	. .	400	. .	76.2	22 37 42.0	. .	+ 25.5	73 44 28.7	+ 0.2
24	334 50	7.3	19.7	12.3	18.4	29	956	008	. .	. .	. .	76.2	25 4 36.3	29.4	+ 28.7	76 11 26.2	. .
25	298 40	14.0	1.5	23.8	29.8	33	348	352	. .	. .	. .	75.8	61 15 37.6	. .	+ 1 45.9	112 23 44.7	. .
26	298 8	9.2	25.2	18.5	24.8	35	. .	. .	. .	732	732	75.8	61 48 9.1	46.5	+ 1 48.2	112 56 18.5	. .
27	298 0	5.5	23.5	15.4	19.9	32	. .	. .	. .	096	. .	75.8	61 55 10.6	. .	+ 1 48.8	113 3 20.6	. .
28	298 0	5.5	23.5	15.4	19.9	35	. .	. .	. .	. .	962	75.8	61 56 10.0	. .	+ 1 49.0	113 4 20.0	. .
29	47 38	6.5	21.4	17.9	22.2	36	. .	. .	. .	136	. .	75.8	312 18 13.6	. .	− 1 4.0	3 23 30.8	− 4.0
30	359 42	11.6	24.2	21.2	26.5	33	210	226	. .	230	234	75.8	0 13 32.7	. .	+ 0.2	51 19 54.1	− 1.5
31	354 32	16.9	2.3	23.9	29.3	37	. .	. .	. .	488	480	75.8	5 22 2.2	. .	+ 5.6	56 28 29.0	− 0.6
32	339 56	11.5	24.7	15.8	23.8	31	. .	520	. .	460	. .	75.8	19 59 3.9	35.2	+ 21.7	71 5 46.8	+ 1.1
33	298 2	11.0	26.1	22.4	28.6	36	922	052	. .	. .	. .	77.5	61 54 32.3	36.5	+ 1 52.1	113 2 45.6	. .
34	298 34	13.2	26.8	20.7	28.0	35	. .	. .	. .	020	000	77.5	61 22 2.6	. .	+ 1 49.6	112 30 13.4	. .
35	331 22	15.7	1.7	24.9	29.2	36	. .	863	. .	851	. .	77.5	28 34 34.2	. .	+ 32.7	79 41 28.1	+ 0.3
36	329 36	22.2	7.4	0.2	6.3	37	. .	232	. .	198	. .	77.5	30 20 45.8	37.0	+ 35.2	81 27 42.2	+ 0.4
37	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		27.3	. .		. .
38	323 46	22.1	5.9	28.3	5.1	35	. .	. .	. .	555	565	77.5	36 10 19.6	. .	+ 41.8	87 17 25.6	− 1.5
39	215 14	27.3	12.5	6.5	9.1	37	. .	. .	923	962	969	77.5	144 43 2.0	. .	− 43.6	86 24 2.8	+ 0.7
40	38 16	19.7	4.5	29.7	2.0	33	. .	953	. .	065	. .	77.5	321 37 54.2	. .	− 48.7	12 43 26.7	− 1.5
41	169 26	24.5	9.3	2.4	6.8	38	922	887	858	902	889	77.5	190 31 12.6	25.3	+ 11.4	40 34 57.2	+ 0.1
42	8 26	22.1	7.3	2.9	5.4	35	979	. .	. .	. .	945	77.5	351 30 27.0	25.5	− 9.2	42 36 39.0	− 1.7
43	344 46	24.1	9.0	3.1	6.4	34	. .	831	. .	857	. .	77.5	15 10 11.2	. .	+ 16.7	66 16 49.1	− 1.1
44	352 34	19.8	4.6	29.0	3.0	37	. .	117	. .	051	. .	77.5	7 22 41.5	. .	+ 8.0	58 29 10.7	− 1.7
45	328 52	17.7	1.2	24.9	1.4	32	. .	. .	. .	551	623	77.5	31 3 30.1	26.1	+ 37.0	82 10 28.3	− 2.6
46	354 30	17.2	1.7	25.0	0.0	28	. .	. .	. .	610	724	77.5	5 24 30.0	. .	+ 5.8	56 30 57.0	− 0.6
47	354 0	18.9	4.3	28.5	1.4	32	. .	131	. .	104	. .	77.5	5 55 24.6	. .	+ 6.4	57 1 52.2	− 0.9
48	58 46	23.1	8.6	3.7	5.9	32	439	443	. .	. .	. .	77.5	301 9 33.4	25.0	− 1 41.6	352 14 13.0	− 2.2
49	312 42	22.8	7.9	0.6	7.1	31	. .	. .	. .	222	152	77.5	47 13 14.3	. .	+ 1 6.5	98 20 42.0	− 1.0
50	349 32	23.8	8.5	1.7	6.5	31	. .	482	. .	422	. .	77.5	10 23 18.8	25.0	+ 11.3	61 29 51.3	− 1.6

No.	Barom.	At. Ther.
	in.	°
1	30.40	29.0
5	30.41	28.0
7	30.42	30.8
10	30.35	37.6
11	30.27	36.5
24	30.21	33.5
26	29.78	43.5
32	29.81	38.2
33	30.07	37.0
36	30.10	37.0
37	30.12	31.0
50	30.11	29.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
9	− 7.9	− 16 15.5	. .	− 16 23.4
10	− 7.9	+ 16 15.5	. .	+ 16 7.6
15	− 0.1	. .	. .	− 0.1
25	− 7.9	+ 16 16.9	. .	+ 16 9.0
26	− 7.9	− 16 16.9	. .	− 16 23.8
27	− 29.4	+ 29.7	. .	+ 0.3
28	− 29.4	− 29.7	0.0	− 59.1
33	− 7.9	− 16 16.1	. .	− 16 24.0
34	− 7.9	+ 16 16.1	. .	+ 16 8.2

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us corrections.
													m. s.	s.	s.	s.	h. m. s.	s.
1874.																		
Dec. 9	1	α Ceti	Sk.	38.3	40.9	42.5	48.7	50.7	52.7	58.8	0.4	2.8	56 50.64	− 0.49	−64.90	−64.82	2 55 45.33	+ 0.10
	2	η Tauri	Sk.	55.7	58.6	0.3	7.0	9.2	11.3	18.0	19.8	22.5	41 9.16	− 0.37	−64.94	−64.83	3 40 3.96	+ 0.11
	3	ζ Persei	Sk.	7.6	11.0	12.5	19.9	22.2	24.5	31.7	33.5	36.7	47 22.18	− 0.31	−64.71	−64.83	3 46 17.04	− 0.13
	4	Io	Sk.	32.5	35.5	. .	. .	. .	. .	. .	. .	. .	55 45.06	− 0.46	. .	−64.83	3 54 39.77	. .
	5	Terpsichore . .	Sk.	39.4	42.4	44.0	51.0	53.7	56.3	3.6	5.5	8.4	58 53.81	− 0.29	. .	−64.83	3 57 48.69	. .
	6	ε Tauri	Sk.	12.0	14.7	16.4	22.8	25.0	27.2	33.6	35.3	37.9	22 24.99	− 0.40	−64.87	−64.84	4 21 19.75	+ 0.02
	7	α Tauri	Sk.	38.0	40.8	42.3	48.7	50.9	53.0	59.4	1.0	3.6	29 50.86	− 0.41	−64.88	−64.84	4 28 45.61	+ 0.02
	8	ε Ursæ Minoris, S. P.	Sk.	22.0	52.0	. .	6.0	36.0	. .	50.5	. .	21.0	59 51.27	− 3.04	. .	−64.85	16 58 43.38	+ 0.20
	9	α Leonis	S.	. .	. .	46.3	48.5	50.5	52.5	56.7	58.2	0.9	2 48.39	− 0.49	−65.20	. .		. .
	10	B. A. C. 7851, S. P.	S.	36.0	3.0	43.9	52.0	25.6	. .	. .	. .	. .	23 58.50	− 7.04	. .	−65.20	22 22 46.26	+13.04
	11	Anonymous . .	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	12	α Ursæ Majoris (R.)	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	13	δ Leonis (R.) . .	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	14	δ Crateris . . .	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	15	Polaris, S. P. . .	S.	. .	23.0	54.5	31.0	3.5	36.5	44.0	41.0	53.0	14 30.14	−22.20	. .	−65.23	1 13 2.71	− 0.17
10	16	β Libræ	F.	9.1	11.8	13.3	19.5	21.6	23.6	29.8	31.4	34.0	11 21.57	− 0.84	−65.65	−65.66	15 10 15.07	− 0.01
	17	γ^2 Ursæ Minoris. .	F.	. .	. .	45.2	51.9	58.4	5.3	11.9	. .	. .	21 58.54	+ 1.06	. .	−65.66	15 20 53.94	+ 0.24
	18	α Coronæ Borealis .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	19	δ Ophiuchi . . .	F.	. .	. .	48.1	50.2	52.3	54.4	56.5	. .	. .	8 52.30	− 0.78	−65.69	−65.68	16 7 45.84	+ 0.03
	20	τ Herculis . . .	F.	. .	. .	57.0	0.1	3.0	6.0	9.0	. .	. .	17 3.02	− 0.14	. .	−65.68	16 15 57.20	+ 0.31
	21	α Scorpii	F.	35.5	38.4	40.0	46.9	49.2	1.4	58.4	0.1	3.0	22 49.21	− 1.04	−65.74	−65.68	16 21 42.49	+ 0.05
11	22	Sun I, N. . . .	F.	14.5	17.3	18.9	25.6	28.0	30.3	36.5	38.3	41.2	14 27.84	− 1.00	. .	−65.70	17 13 21.14	. .
	23	Sun II, S. . . .	F.	36.4	39.3	41.0	47.4	49.8	52.0	58.7	0.4	3.2	16 49.80	− 1.00	. .	−65.70	17 15 43.10	. .
	24	δ Ursæ Minoris. .	F.	47.5	31.0	56.5	5.5	19.5	25.0	. .	57.5	42.5	13 14.82	+ 8.95	. .	−65.71	18 12 18.06	− 2.16
	25	α Lyræ	F.	30.6	33.8	35.7	43.7	46.2	48.8	56.5	58.6	2.0	33 46.21	− 0.29	−65.65	−65.72	18 32 40.20	− 0.05
	26	β Lyræ	F.	. .	. .	. .	. .	. .	. .	. .	43.7	46.6	46 32.03	− 0.37	−65.77	−65.72	18 45 25.94	+ 0.08
	27	ζ Aquilæ. . . .	F.	31.8	34.4	36.0	42.2	44.4	46.5	52.8	54.4	57.0	0 44.39	− 0.61	−65.76	−65.73	18 59 38.05	+ 0.11
	28	ε Delphini . .	F.	6.7	9.3	10.9	17.1	19.3	21.3	27.5	29.0	31.7	28 19.20	− 0.64	−65.68	−65.75	20 27 12.81	− 0.02
	29	Ceres	F.	9.3	12.0	13.9	20.6	22.9	25.2	32.0	33.8	36.5	50 22.91	− 0.36	. .	−65.92	6 49 16.63	. .
	30	δ Draconis, S. P. .	F.	. .	. .	46.2	40.9	35.6	29.9	24.8	. .	. .	13 35.48	− 2.23	. .	−65.93	19 12 27.32	− 0.40
	31	a^2 Geminorum . .	F.	29.9	32.8	34.7	41.9	44.3	46.7	54.0	55.8	58.8	27 44.32	− 0.28	−66.03	−65.93	7 26 38.11	+ 0.34
	32	α Canis Minoris .	F.	40.3	42.9	44.3	50.5	52.6	54.6	0.7	2.2	4.8	33 52.54	− 0.61	−65.98	−65.93	7 32 46.00	− 0.11
	33	β Geminorum . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	34	ϕ Geminorum . .	F.	44.0	46.8	48.4	55.2	57.6	59.9	6.9	8.5	11.4	46 57.63	− 0.35	−65.95	−65.94	7 45 51.34	− 0.07
	35	λ Ursæ Minoris, S. P.	F.	. .	. .	31.0	40.0	53.0	3.0	. .	. .	. .	49 52.08	−35.18	. .	−65.94	19 48 10.96	− 6.92
	36	15 Argus	F.	7.0	10.0	11.5	18.3	20.6	22.9	29.6	31.0	33.9	3 20.53	− 0.95	−65.79	−65.94	8 2 13.64	− 0.21
	37	Anonymous . .	F.	51.0	53.8	55.3	1.6	3.8	6.0	12.2	14.0	16.6	22 3.81	− 0.49	. .	−65.95	8 20 57.37	− 3.84
	38	σ^2 Ursæ Majoris . .	F.	. .	. .	. .	. .	. .	40.0	50.2	55.0	1.8	0 29.33	+ 0.87	. .	−65.96	8 59 24.24	+ 0.24
	39	Uranus. . . .	F.	. .	. .	. .	. .	. .	7.5	11.5	13.2	15.8	12 3.05	− 0.48	. .	−65.96	9 10 56.61	. .
14	40	Moon I, S. . . .	E.	7.0	10.0	11.6	18.0	20.2	22.3	28.9	30.5	33.0	24 20.77	− 0.72	. .	−67.03	22 23 12.42	+67.37
	41	ζ Pegasi	E.	7.7	10.4	12.0	18.0	20.2	22.3	28.6	30.0	32.7	36 20.21	− 0.53	−67.00	−67.03	22 35 12.65	+ 0.03
	42	o Piscium . . .	E.	42.9	45.5	47.1	53.2	55.3	57.4	3.6	5.1	7.8	39 55.32	− 0.54	−67.04	−67.07	1 38 47.71	− 0.06
	43	Neptune . . .	E.	. .	. .	19.6	21.6	23.7	25.9	27.9	. .	. .	48 23.74	− 0.53	. .	−67.07	1 47 16.14	. .
	44	β Arietis	E.	. .	. .	. .	. .	54.0	56.0	0.5	2.0	4.9	48 51.75	− 0.44	−67.04	−67.07	1 47 44.24	− 0.01
	45	α Arietis	E.	2.0	4.8	6.5	13.0	15.3	17.5	24.2	25.9	28.6	1 15.31	− 0.41	−67.04	−67.07	2 0 7.83	− 0.02
	46	ξ^1 Ceti.	E.	20.6	22.2	26.3	28.4	30.5	32.5	34.6	38.6	40.2	7 30.43	− 0.54	−67.15	−67.07	2 6 22.82	+ 0.12
	47	ι Cassiopeæ. . . .	E.	23.3	29.8	33.6	49.0	54.4	59.6	15.0	19.0	25.5	19 54.36	+ 0.52	. .	−67.07	2 18 47.81	+ 0.09
	48	5 Ursæ Minoris, S. P.	E.	48.0	37.0	31.0	54.8	56.4	47.8	22.0	15.7	5.0	28 56.41	− 2.71	. .	−67.07	14 27 46.63	+ 0.04
	49	Pallas	E.	6.5	9.3	11.0	18.0	20.4	22.6	29.5	31.2	34.1	34 20.29	− 0.83	. .	−67.08	2 33 12.38	. .

4, 5. Wire A used.
8, 30. Bisections at sets B and D.
30. Telescope micrometer readings reduced for forty-one revolutions.
40. Bisections at wires II–VI.
49. Wire B used.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	324 38	10 16.5	0.0	22.1	29.7	30	618	616	. .	. .	. .	76.7	35 16 56.6	41.0	+ 43.1	86 24 0.9	− 1.3
2	344 46	15.6	28.3	20.5	27.1	35	660	702	. .	. .	. .	76.7	15 10 12.6	. .	+ 16.3	66 16 50.1	0.0
3	352 34	13.1	27.0	17.9	23.7	37	808	850	. .	. .	. .	76.7	7 22 43.2	. .	+ 7.8	58 29 12.2	− 0.2
4	328 46	15.5	0.0	21.0	27.2	33	075	. .	. .	. .	220	76.7	31 7 1.5	. .	+ 36.3	82 13 59.0	− 2.6
5	354 26	21.0	4.4	26.5	1.0	33	. .	250	. .	100	. .	76.7	5 27 7.0	. .	+ 5.7	56 33 33.9	− 0.6
6	339 56	18.5	2.9	3.0	29.5	30	848	902	. .	. .	. .	76.7	19 59 4.6	. .	+ 22.0	71 5 47.8	+ 2.1
7	337 18	20.6	2.5	25.5	2.0	33	440	440	. .	. .	. .	76.7	22 37 43.0	. .	+ 25.2	73 44 29.4	+ 0.8
8	58 46	13.3	27.6	20.4	26.0	33	262	. .	. .	. .	175	76.7	301 9 33.4	32.5	− 1 40.1	352 14 14.5	− 0.5
9	333 38	18.5	2.3	23.9	29.8	36	. .	. .	. .	. .	010	77.7	26 18 22.6	. .	+ 30.4	77 25 14.2	− 1.6
10	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
11	320 10	20.4	3.7	26.9	3.2	35	. .	076	. .	992	. .	77.7	39 46 9.5	. .	+ 51.1	90 53 21.8	− 8.2
12	156 24	12.0	26.6	4.2	8.3	31	114	060	056	987	025	77.7	203 31 14.4	28.1	+ 26.7	27 34 40.1	− 0.5
13	197 36	26.7	13.3	5.3	8.0	32	. .	. .	. .	800	800	77.7	162 19 12.7	. .	− 19.6	68 47 28.1	− 1.4
14	306 58	17.0	1.7	22.5	29.6	35	. .	. .	. .	430	458	77.7	52 58 12.6	. .	+ 1 21.3	104 5 55.1	− 0.4
15	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		28.9	. .		. .
16	312 8	11 2.1	15.3	10.3	17.1	32	. .	640	. .	626	. .	76.9	47 47 44.6	. .	+ 1 5.7	98 55 11.5	+ 0.1
17	33 18	10 19.2	0.8	27.2	0.7	33	. .	. .	702	. .	. .	76.9	326 37 46.8	. .	− 39.2	17 43 28.8	+ 0.1
18	348 12	16.1	24.4	18.0	25.3	40	. .	298	. .	296	. .	76.9	11 45 21.9	42.3	+ 12.4	62 51 55.5	+ 1.4
19	317 42	11.0	23.8	18.4	25.5	39	. .	116	. .	082	. .	76.9	42 15 2.1	. .	+ 54.0	93 22 17.3	+ 0.5
20	7 40	9.0	23.2	17.1	24.5	39	. .	. .	. .	962	968	76.9	352 17 15.1	. .	− 8.1	43 23 28.2	+ 2.9
21	294 56	2.6	16.3	10.5	19.1	38	. .	250	. .	170	. .	76.9	65 0 40.8	. .	+ 2 6.9	116 9 8.9	− 1.5
22	298 18	13.6	28.5	20.2	25.5	36	768	660	. .	. .	. .	76.9	61 38 27.4	. .	+ 1 49.3	112 46 37.9	. .
23	297 46	4.7	21.5	15.0	20.7	38	. .	. .	. .	810	834	76.9	62 10 53.6	44.6	+ 1 51.8	113 19 6.6	. .
24	47 38	15.5	29.1	23.5	26.8	36	018	. .	. .	. .	900	76.9	312 18 18.2	. .	− 1 5.0	3 23 34.4	− 1.6
25	359 42	11.7	25.8	21.3	26.9	33	. .	330	. .	340	. .	76.9	0 13 35.8	. .	+ 0.2	51 19 57.2	+ 0.5
26	354 16	12.4	29.2	23.0	25.5	36	. .	. .	. .	770	776	76.9	5 40 30.0	. .	+ 5.9	56 46 57.1	+ 1.6
27	334 44	8.4	24.2	16.8	22.8	37	090	092	. .	096	092	76.9	25 12 29.9	45.0	+ 27.9	76 19 19.0	− 0.1
28	331 56	6.8	23.0	16.9	21.7	36	. .	836	. .	886	. .	76.9	28 0 25.3	42.7	+ 31.6	79 7 18.1	+ 1.3
29	347 42	16.2	29.8	21.0	28.5	41	. .	250	. .	240	. .	76.5	12 15 39.0	. .	+ 13.4	63 22 13.6	− 1.1
30	73 34	16.2	27.7	19.3	24.8	39	. .	064	. .	050	. .	76.5	286 23 33.9	28.2	− 3 26.3	337 26 28.8	− 1.0
31	353 12	13.7	26.6	19.3	25.0	34	. .	164	. .	166	. .	76.5	6 43 47.9	. .	+ 7.3	57 50 16.4	− 1.3
32	326 36	21.0	4.7	25.6	2.1	35	. .	124	. .	134	. .	76.5	33 20 9.6	. .	+ 40.4	84 27 11.2	− 2.7
33	349 22	14.1	27.1	19.2	26.3	33	. .	. .	. .	992	986	76.5	10 33 46.1	. .	+ 11.5	61 40 18.8	− 1.6
34	348 8	23.6	6.5	27.5	3.8	34	632	654	. .	. .	. .	76.5	11 48 4.1	. .	+ 12.8	62 54 38.1	− 2.2
35	52 6	13.0	25.7	17.8	24.2	38	294	274	250	216	. .	76.5	307 50 49.2	. .	− 1 19.0	358 55 51.4	− 2.9
36	297 8	20.8	3.3	25.5	2.4	34	. .	810	. .	814	. .	76.5	62 48 4.3	27.8	+ 1 59.1	113 56 24.6	− 1.9
37	337 46	16.8	0.6	22.2	29.2	34	. .	376	. .	384	. .	76.5	22 9 54.6	. .	+ 25.0	73 16 40.8	− 5.6
38	28 40	10.0	23.9	15.5	22.4	34	. .	814	. .	810	. .	76.5	331 15 55.2	. .	− 33.7	22 21 42.7	− 2.3
39	338 2	14.2	27.9	20.2	26.8	34	. .	. .	. .	878	884	76.5	21 54 0.3	28.5	+ 24.7	73 0 46.2	. .
40	305 44	19.0	3.6	24.6	0.7	37	895	820	650	435	190	79.3	54 12 48.7	. .	+ 1 23.1	105 20 33.0	. .
41	331 14	21.4	5.7	27.7	2.5	35	. .	705	. .	695	. .	79.3	28 42 22.1	. .	+ 32.9	79 49 16.2	+ 1.3
42	329 34	23.2	8.2	1.0	5.1	31	. .	400	. .	370	. .	79.3	30 21 18.8	. .	+ 35.7	81 28 15.7	− 0.5
43	350 14	24.0	8.2	1.0	6.2	38	240	220	. .	. .	. .	79.3	29 43 3.5	31.0	+ 34.8	80 49 59.5	. .
44	341 14	25.6	9.3	0.8	6.8	31	. .	. .	. .	750	720	79.3	18 41 25.7	. .	+ 20.7	69 18 7.6	+ 1.7
45	343 54	21.7	7.5	29.0	1.8	30	. .	180	. .	175	. .	79.3	16 0 58.3	. .	+ 17.6	67 7 37.1	− 0.9
46	329 18	25.2	10.9	3.0	8.1	31	. .	585	. .	540	. .	79.3	30 37 23.7	. .	+ 36.2	81 44 21.1	− 1.0
47	27 52	12.5	27.4	19.0	23.5	33	. .	200	. .	220	. .	79.3	332 3 36.0	. .	− 32.5	23 9 24.7	− 1.2
48	64 46	9 23.0	7.0	29.8	3.8	36	. .	820	. .	815	. .	79.3	295 10 39.4	. .	− 2 9.8	346 14 50.8	+ 2.3
49	293 10	10 21.3	6.7	27.5	1.0	30	. .	810	. .	790	. .	79.3	66 47 40.1	. .	+ 2 22.2	117 56 23.5	− 4.5

No.	Barom.	At. Ther.
	in.	°
1	30.09	38.3
8	30.13	36.0
12	30.21	31.0
15	30.27	31.0
18	30.19	40.5
23	30.15	43.0
27	30.17	51.5
28	30.13	42.5
30	30.22	33.0
36	30.21	32.0
39	30.23	31.0
43	30.22	33.5

For summary of the elements of reduction see page 3.

No.	Parallax	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	° ′ ″
22	− 7.9	+ 16 14.3	. .	+ 16 6.4
23	− 8.0	− 16 14.3	. .	− 16 22.3
39	− 0.2	. . .	. .	− 0.2
40	−46 39.0	− 15 45.1	. .	−1 2 24.1
43	− 0.2	. . .	. .	− 0.2

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Dec. 14	1	γ Ceti	E.	45.3	47.9	49.5	55.6	57.6	59.7	5.8	7.3	9.8	37 57.61	− 0.58	−67.16	−67.08	2 36 49.95	+ 0.08
	2	Juno	E.	24.7	27.4	28.9	35.0	37.0	39.0	45.2	46.8	49.4	46 37.04	− 0.65	. .	−67.08	2 45 29.31	. .
	3	β Ursæ Minoris, S. P.	E.	58.6	49.0	43.5	20.0	12.8	5.0	41.6	36.1	26.5	52 12.57	− 2.48	. .	−67.08	14 51 3.01	+ 0.06
	4	α Ceti	E.	40.7	43.2	44.8	50.9	53.0	55.0	1.0	2.7	5.2	56 52.94	− 0.58	−67.12	−67.08	2 55 45.28	+ 0.06
	5	Vesta	E.	10.6	13.2	14.8	21.2	23.3	25.5	31.7	33.3	35.9	7 23.28	− 0.49	. .	−67.09	4 6 15.70	. .
	6	γ Tauri	E.	36.3	38.9	40.6	46.9	49.0	51.2	57.5	59.0	1.7	13 49.01	− 0.48	−67.03	−67.09	4 12 41.44	− 0.05
	7	ε Tauri	E.	14.3	17.0	18.6	25.0	27.3	29.5	35.9	37.6	40.2	22 27.27	− 0.45	−67.06	−67.09	4 21 19.73	− 0.04
	8	α Tauri	E.	40.3	43.0	44.6	50.9	53.0	55.2	1.6	3.1	5.9	29 53.07	− 0.47	−66.99	−67.10	4 28 45.50	− 0.13
	9	Astræa	E.	25.2	27.8	29.4	35.7	37.8	39.9	46.2	47.9	50.5	42 37.82	− 0.49	. .	−67.10	4 41 30.23	. .
	10	ι Aurigæ	E.	45.0	47.8	49.7	57.0	59.4	1.8	9.0	11.0	14.0	49 59.41	− 0.30	−67.09	−67.10	4 48 52.01	− 0.05
	11	Elpis	E.	36.4	39.5	41.0	47.0	49.0	51.0	57.4	59.0	1.5	47 49.09	− 0.53	. .	−67.11	5 46 41.45	. .
	12	α Orionis	E.	20.2	22.9	24.5	30.6	32.8	34.8	41.0	42.5	45.0	49 32.70	− 0.55	−67.11	−67.11	5 48 25.04	− 0.03
	13	22 Camelopardalis	E.	38.7	45.7	50.2	8.0	13.4	19.0	36.4	40.9	48.0	6 13.37	+ 0.68	. .	−67.11	6 5 6.94	+ 0.39
	14	δ Ursæ Minoris, S. P.	E.	. .	. .	44.5	10.0	36.0	0.5	26.5	. .	. .	13 35.50	− 9.00	. .	−67.11	18 12 19.39	− 0.30
	15	μ Geminorum	E.	18.9	21.6	23.4	30.0	32.1	34.5	41.0	42.8	45.5	16 32.20	− 0.42	−67.11	−67.11	6 15 24.67	− 0.04
	16	Pales	E.	38.7	41.2	43.3	50.0	52.1	54.4	1.4	3.1	5.7	25 52.21	− 0.39	. .	−67.11	6 24 44.71	. .
	17	Anonymous	E.	. .	. .	. .	. .	. .	. .	10.3	11.9	14.2	26 1.07	− 0.39	. .	−67.11	6 24 53.57	. .
	18	γ Geminorum	E.	25.0	27.6	29.3	35.7	37.8	39.9	46.2	47.8	50.6	31 37.77	− 0.47	−67.11	−67.12	6 30 30.18	− 0.04
	19	51 Cephei	E.	. .	. .	10.0	52.0	35.5	17.5	0.5	. .	. .	42 35.10	+ 9.66	. .	−67.12	6 41 37.64	− 0.23
	20	Ceres	E.	35.2	38.0	39.8	46.6	48.9	51.2	58.1	59.8	2.6	47 48.91	− 0.37	. .	−67.12	6 46 41.42	. .
	21	ϵ Canis Majoris	E.	37.8	40.7	42.4	49.4	51.8	54.0	1.0	2.9	6.0	54 51.78	− 0.84	−67.16	−67.12	6 53 43.82	− 0.01
	22	δ Canis Majoris	E.	13.7	16.6	18.4	25.0	27.4	29.7	36.5	38.2	41.0	4 27.39	− 0.82	−67.15	−67.12	7 3 19.45	− 0.02
	23	δ Geminorum	E.	34.4	37.3	38.9	. .	. .	. .	56.6	58.0	0.9	13 47.68	− 0.41	−67.15	−67.12	7 12 40.15	− 0.03
	24	Anonymous	S.	. .	. .	. .	. .	24.0	25.8	29.9	31.4	34.0	35 21.74	− 0.59	. .	−67.11	10 34 14.04	− 2.79
	25	Bessel's Zones 222	S.	. .	. .	. .	40.0	42.2	44.3	48.4	49.9	52.6	35 40.16	− 0.59	. .	−67.11	10 34 32.46	− 2.79
	26	δ Crateris	S.	0.3	2.8	4.3	10.7	12.8	15.0	21.0	22.6	25.5	14 12.78	− 0.66	−67.12	−67.12	11 13 5.00	− 0.02
	27	τ Leonis	S.	25.6	28.0	29.6	. .	. .	. .	45.9	47.4	50.0	22 37.75	− 0.53	−67.14	−67.12	11 21 30.10	0.00
	28	Anonymous	S.	. .	. .	34.5	36.5	38.6	40.6	42.7	. .	. .	22 38.58	− 0.53	. .	−67.12	11 21 30.93	− 2.63
	29	υ Leonis	S.	27.9	30.3	32.0	38.0	40.0	42.1	48.3	49.9	52.3	31 40.09	− 0.56	−67.14	−67.12	11 30 32.41	− 0.02
	30	β Leonis	S.	35.3	37.9	39.5	45.9	48.0	50.1	56.5	58.0	0.8	43 48.00	− 0.43	−67.09	−67.12	11 42 40.45	− 0.05
	31	XI. 14	S.	21.0	24.0	26.0	33.9	36.5	39.1	46.9	48.7	52.0	47 36.46	− 0.87	. .	−67.12	11 46 28.47	− 1.97
	32	Polaris, S. P.	S.	. .	. .	20.0	55.0	28.0	1.5	37.0	. .	. .	14 28.30	−22.56	. .	−67.13	1 12 58.61	− 0.18
	33	μ^1 Bootis	F.	36.5	39.7	41.6	. .	. .	. .	2.2	4.2	7.4	20 51.93	− 0.20	−67.16	−67.10	15 19 44.63	+ 0.05
	34	γ^2 Ursæ Minoris	F.	. .	. .	. .	59.8	6.5	12.8	26.3	32.2	40.1	21 59.63	+ 1.24	. .	−67.10	15 20 53.77	− 0.08
	35	α Coronæ Borealis	F.	15.9	18.7	20.4	25.0	27.3	. .	. .	38.7	43.3	30 29.58	− 0.36	−67.07	−67.10	15 29 22.12	− 0.03
	36	α Serpentis	F.	0.4	3.0	4.6	8.8	10.7	. .	. .	. .	. .	39 12.80	− 0.58	−67.21	−67.10	15 38 5.12	+ 0.13
	37	ϵ Serpentis	F.	28.9	31.5	33.0	39.1	41.2	43.3	49.4	51.0	53.4	45 41.20	− 0.60	−67.15	−67.10	15 44 33.50	+ 0.05
	38	ϵ Coronæ Borealis	F.	16.8	19.8	21.6	28.4	30.7	32.9	39.9	41.4	44.3	53 30.64	− 0.35	. .	−67.10	15 52 23.19	+ 0.01
	39	β^1 Scorpii	F.	3.0	5.8	7.4	14.0	16.0	18.3	24.9	26.5	29.2	59 16.12	− 0.84	−67.08	−67.10	15 58 8.18	+ 0.01
	40	δ Ophiuchi	F.	41.5	45.4	49.7	51.7	53.8	55.8	57.8	2.0	6.0	8 53.74	− 0.68	−67.14	−67.11	16 7 45.95	+ 0.05
	41	τ Herculis	F.	46.5	50.4	52.5	1.3	4.5	7.3	16.4	18.4	22.3	17 4.40	− 0.03	. .	−67.11	16 15 57.26	+ 0.30
	42	ζ Ophiuchi	F.	. .	. .	18.6	20.6	22.7	24.6	26.8	. .	. .	31 22.66	− 0.75	−67.26	−67.11	16 30 14.80	+ 0.15
	43	η Herculis	F.	26.3	29.4	31.4	39.4	42.0	44.8	52.6	54.6	57.8	39 42.03	− 0.18	−67.10	−67.11	16 38 34.74	0.00
	44	Venus II, S.	F.	15.6	18.5	20.0	26.5	28.8	31.0	37.3	38.9	41.8	49 28.71	− 0.86	. .	−67.12	16 48 20.73	− 2.28
	45	Venus N.	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
15	46	Sun I, N.	F.	56.4	59.3	0.9	7.7	9.8	12.2	18.8	20.6	23.2	32 9.88	− 0.86	. .	−67.13	17 31 1.87	. .
	47	Sun II, S.	F.	19.2	22.1	23.6	30.1	32.6	34.6	41.6	43.0	45.9	34 32.52	− 0.88	. .	−67.13	17 33 24.51	. .
	48	γ Aquilæ	F.	12.7	15.2	16.8	. .	. .	. .	. .	. .	. .	41 25.11	− 0.55	−67.29	−67.15	19 40 17.41	+ 0.17
	49	α Aquilæ	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	50	κ Cephei	F.	. .	. .	44.3	53.3	2.4	12.3	21.2	. .	. .	14 2.70	+ 2.08	. .	−67.16	20 12 57.62	− 0.26

3, 50. Bisections at sets B and D.
11, 16, 17, 24. Wire A used.
25, 28. Wire B used.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	323 46	10 26.9	11.8	2.7	8.0	35	. .	325	. .	270	. .	79.3	36 10 21.4	. .	+ 44.8	87 17 27.4	− 0.1
2	315 42	21.8	6.8	28.5	3.1	32	. .	095	. .	090	. .	79.3	44 13 27.5	. .	+ 59.7	95 20 48.4	− 5.2
3	66 20	20.4	4.8	28.1	2.8	33	235	. .	. .	. .	205	79.3	293 35 43.5	. .	− 2 19.7	344 39 45.0	+ 2.9
4	324 38	23.8	8.1	1.5	5.6	29	. .	995	. .	985	. .	79.3	35 16 57.6	. .	+ 43.4	86 24 2.2	− 0.3
5	335 36	19.7	4.3	26.5	0.7	32	. .	260	. .	170	. .	79.3	24 19 27.3	. .	+ 27.8	75 26 16.3	− 2.2
6	336 22	19.8	4.2	25.6	1.2	32	. .	895	. .	840	. .	79.3	23 33 37.2	27.5	+ 26.9	74 40 25.3	+ 0.5
7	339 56	25.8	10.5	2.2	5.5	30	. .	215	. .	220	. .	79.3	19 59 2.5	. .	+ 22.4	71 5 46.1	+ 0.4
8	337 18	28.5	13.2	5.1	10.3	32	. .	645	. .	630	. .	79.3	22 37 42.7	. .	+ 25.7	73 44 29.6	+ 0.9
9	334 48	24.9	8.5	0.5	5.2	34	. .	045	. .	990	. .	79.3	25 7 59.3	. .	+ 29.0	76 14 49.5	− 2.9
10	354 0	21.0	4.5	27.3	1.9	31	. .	995	. .	990	. .	79.3	5 55 24.8	. .	+ 6.4	57 1 52.4	− 0.1
11	330 34	21.2	4.2	27.2	1.9	37	. .	775	. .	740	. .	79.3	29 20 19.8	. .	+ 34.8	80 27 15.8	− 2.7
12	328 26	25.3	9.3	2.0	6.7	33	. .	810	. .	745	. .	79.3	31 29 56.7	. .	+ 38.0	82 36 55.9	− 0.7
13	30 24	20.7	4.2	24.8	0.8	36	. .	585	. .	560	. .	79.3	329 32 37.6	. .	− 36.4	20 38 22.4	+ 3.8
14	54 24	27.4	11.7	6.0	7.7	31	810	. .	760	. .	820	79.3	305 31 28.6	. .	− 1 26.1	356 36 23.7	+ 1.0
15	343 38	29.5	15.1	6.0	10.2	36	. .	345	. .	260	. .	79.3	16 18 39.8	. .	+ 18.2	67 25 19.2	− 0.4
16	346 2	23.0	6.5	29.3	1.8	36	. .	320	. .	295	. .	79.3	13 51 59.2	. .	+ 15.3	64 58 35.7	− 1.3
17	346 2	23.0	6.5	29.3	1.8	32	. .	. .	. .	. .	200	79.3	13 50 56.8	. .	+ 15.3	64 57 33.3	. .
18	337 34	20.8	9.6	0.3	4.7	37	. .	370	. .	310	. .	79.3	22 22 49.3	. .	+ 25.6	73 29 36.1	− 1.0
19	48 16	26.6	10.1	2.7	5.3	36	610	. .	620	. .	585	79.3	311 40 40.4	24.5	− 1 9.7	2 45 51.9	− 1.0
20	347 58	11 1.8	16.0	8.3	13.1	37	. .	965	. .	935	. .	79.3	11 59 7.2	. .	+ 13.2	63 5 41.6	− 1.1
21	292 16	10 24.0	8.2	0.5	3.8	30	. .	585	. .	575	. .	79.3	67 39 5.8	. .	+ 2 30.3	118 47 57.3	− 1.7
22	294 54	20.2	3.3	26.3	1.4	38	. .	130	. .	090	. .	79.3	65 2 57.3	. .	+ 2 13 0	116 11 31.5	+ 0.1
23	343 16	21.7	5.8	29.8	2.6	36	. .	590	. .	550	. .	79.3	16 40 36.2	. .	+ 18.6	67 47 16.0	+ 0.9
24	316 14	26.3	10.7	4.5	9.5	33	. .	. .	. .	. .	866	79.3	43 39 26.9	20.0	+ 59.9	94 46 48.0	− 9.8
25	316 14	26.3	10.7	4.5	9.5	39	. .	. .	. .	. .	699	79.3	43 46 2.6	. .	+ 1 0.2	94 53 24.0	− 9.8
26	306 58	15.8	0.5	21.9	0.2	35	. .	356	. .	280	. .	79.3	52 58 11.4	19.8	+ 1 23.2	104 5 55.8	− 0.9
27	324 36	19.6	3.5	26.1	3.0	34	928	. .	. .	. .	958	79.3	35 20 9.2	. .	+ 44.6	86 27 15.0	+ 0.1
28	324 36	19.6	3.5	26.1	3.0	30	. .	946	. .	882	. .	79.3	35 21 40.9	. .	+ 44.6	86 28 46.7	−15.2
29	320 56	21.4	5.0	28.5	5.0	36	. .	980	. .	980	. .	79.3	39 0 42.3	. .	+ 51.0	90 7 54.5	− 0.7
30	336 20	14.6	28.6	20.7	28.1	38	. .	296	. .	256	. .	79.3	23 36 55.3	. .	+ 27.5	74 43 44.0	− 0.3
31	283 28	16.7	0.4	23.6	29.4	33	. .	303	. .	369	. .	79.3	76 27 41.3	19.1	+ 4 16.9	127 38 19.4	− 2.6
32	52 22	18.0	1.0	24.0	28.3	34	147	. .	064	. .	070	79.3	307 33 53.2	17.9	− 1 22.1	358 38 52.3	+ 0.8
33	358 52	11.9	24.8	19.5	24.5	37	840	856	. .	. .	. .	78.4	1 4 45.0	. .	+ 1.2	52 11 7.4	− 2.3
34	33 18	18.8	29.1	24.0	29.6	33	. .	. .	. .	912	852	78.4	326 37 51.4	. .	− 41.3	17 43 31.3	+ 1.3
35	348 10	9.6	21.7	16.4	23.5	32	. .	. .	. .	480	496	78.4	11 45 21.1	22.6	+ 13.1	62 51 55.4	0.0
36	327 52	10.0	21.8	16.3	24.5	34	. .	380	. .	384	. .	78.4	32 3 49.8	. .	+ 39.3	83 10 50.3	− 0.1
37	325 54	11.2	23.4	17.4	25.0	33	. .	. .	. .	710	706	78.4	34 1 41.0	. .	+ 42.3	85 8 44.5	+ 0.4
38	348 18	7.8	20.9	13.0	22.0	39	. .	474	. .	480	. .	78.4	11 33 5.7	. .	+ 12.9	62 45 39.8	+ 1.1
39	301 36	14.5	27.0	20.4	28.7	33	. .	. .	. .	400	308	78.4	58 19 38.7	23.2	+ 1 41.4	109 27 41.3	− 0.8
40	317 42	15.7	26.3	21.2	29.0	38	606	610	. .	612	620	78.4	42 14 59.4	. .	+ 56.8	93 22 17.4	0.0
41	7 40	10.1	23.2	16.8	23.2	39	. .	. .	. .	808	820	78.4	352 17 14.1	. .	− 8.5	43 23 26.8	+ 0.1
42	310 44	20.5	4.3	27.7	4.6	31	. .	440	. .	320	. .	78.4	49 11 14.9	. .	+ 1 12.3	100 18 48.4	+ 2.6
43	0 12	21.9	5.0	28.9	5.5	34	. .	868	. .	834	. .	78.4	359 44 9.4	. .	− 0.3	50 50 30.3	+ 3.0
44	300 30	1.0	14.0	8.0	14.3	36	170	. .	. .	. .	172	78.4	59 26 8.1	. .	+ 1 45.4	110 34 14.7	. .
45	300 30	1.0	14.0	8.0	14.3	32	. .	040	. .	038	. .	78.4	59 25 5.0	25.2	+ 1 45.3	110 33 11.5	. .
46	298 2	2.4	18.4	10.5	17.5	34	710	688	. .	. .	. .	78.4	61 53 48.2	26.3	+ 1 56.1	113 2 5.5	. .
47	297 30	28.3	14.1	6.9	12.7	36	. .	. .	. .	960	992	78.4	62 25 19.4	. .	+ 1 58.8	113 34 39.4	. .
48	331 22	14.0	27.3	20.8	27.4	37	. .	018	. .	010	. .	78.4	28 31 34.4	. .	+ 33.7	79 41 29.3	+ 0.5
49	329 36	21.2	5.3	27.6	5.9	37	. .	214	. .	214	. .	78.4	30 20 45.1	. .	+ 36.2	81 27 42.5	− 0.3
50	38 22	26.1	8.5	1.6	6.8	35	. .	410	. .	410	. .	78.4	321 34 20.8	29.6	− 49.0	12 39 53.0	− 1.7

No.	Barom.	At. Ther.
	in.	°
19	30.31	26.5
26	30.38	22.0
32	30.44	20.0
35	30.50	23.0
39	30.49	24.0
45	30.49	26.0
46	30.48	27.0
50	30.47	29.5

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
44	− 28.0	− 31.7	. .	− 59.7
45	− 28.0	+ 31.7	− 0.2	+ 3.5
46	− 7.9	+ 16 16.9	. .	+ 16 9.0
47	− 8.0	− 16 16.9	. .	− 16 24.9

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
													m. s.	s.	s.	s.	h. m. s.	s.
1874. Dec. 15	1	Moon I, S. . .	F.	33.2	35.8	37.4	43.8	45.9	48.0	54.2	55.9	58.4	15 45.84	− 0.71	. .	−67.20	23 14 37.93	+66.59
	2	ω Piscium . .	F.	48.5	51.1	52.6	58.7	0.7	2.9	9.0	10.6	13.3	54 0.82	− 0.56	−67.18	−67.21	23 52 53.05	− 0.02
	3	α Andromedæ .	F.	48.8	51.5	53.2	0.2	2.6	4.9	11.9	13.5	16.6	3 2.58	− 0.30	−67.21	−67.21	0 1 55.07	+ 0.02
	4	4 Draconis, S. P.	F.	. .	. .	. .	. .	. .	. .	50.6	43.3	. .	7 31.08	− 3.81	. .	−67.21	12 6 20.06	− 0.47
	5	γ Pegasi . . .	F.	42.5	45.0	46.7	53.1	55.3	57.3	3.7	5.3	7.9	7 55.20	− 0.47	−67.22	−67.21	0 6 47.52	− 0.01
	6	Polaris . . .	F.	. .	. .	46.5	12.0	39.0	1.5	32.0	. .	. .	13 38.20	+26.57	. .	−67.23	1 12 57.54	− 0.82
	7	Elpis . . .	F.	. .	42.5	44.2	48.4	51.0	53.2	1.0	2.6	5.0	46 52.71	− 0.53	. .	−67.29	5 45 44.89	. .
	8	δ Ursæ Minoris, S. P.	F.	. .	. .	45.5	12.0	38.0	2.5	30.0	. .	. .	13 37.60	−11.52	. .	−67.29	18 12 18.79	− 0.79
	9	Pales . . .	F.	. .	. .	52.1	54.1	56.0	58.0	0.6	. .	. .	24 56.16	− 0.35	. .	−67.29	6 23 48.52	. .
	10	γ Geminorum . .	F.	. .	. .	33.7	35.7	37.9	40.2	42.1	. .	. .	31 37.92	− 0.45	−67.26	−67.30	6 30 30.17	− 0.07
	11	51 Cephei . . .	F.	. .	. .	7.5	50.5	33.0	15.5	55.0	. .	. .	42 32.30	+12.61	. .	−67.30	6 41 37.61	− 0.47
	12	Ceres . . .	F.	41.2	44.0	45.7	52.7	55.0	57.2	4.0	5.7	8.5	46 54.89	− 0.32	. .	−67.30	6 43 47.27	. .
	13	ε Canis Majoris.	F.	37.9	40.0	42.6	49.0	51.9	54.2	1.3	3.0	5.9	54 51.91	− 0.93	−67.18	−67.30	6 55 43.68	− 0.17
	14	δ Canis Majoris.	F.	13.9	16.9	18.6	25.4	27.6	29.8	36.7	38.3	41.2	4 27.60	− 0.90	−67.26	−67.30	7 3 19.40	− 0.09
	15	Anonymous . .	F.	. .	. .	. .	. .	. .	. .	3.2	5.0	7.3	13 54.47	− 0.41	. .	−67.31	7 12 46.75	. .
	16	α^2 Geminorum . .	F.	31.5	34.4	36.2	43.3	45.7	48.0	55.4	57.2	0.2	27 45.77	− 0.25	−67.39	−67.31	7 26 38.21	+ 0.32
	17	Polyhymnia . .	F.	. .	. .	. .	. .	. .	. .	22.6	24.6	. .	31 13.77	− 0.35	. .	−67.31	7 30 6.11	. .
	18	Anonymous . .	F.	15.0	17.8	19.5	. .	. .	. .	. .	. .	. .	31 28.48	− 0.35	. .	−67.31	7 30 20.82	. .
	19	β Geminorum . .	F.	34.3	37.2	39.0	45.9	48.3	50.7	57.6	59.2	2.0	38 48.24	− 0.30	−67.27	−67.31	7 37 40.63	− 0.07
	20	φ Geminorum . .	F.	45.3	48.1	50.0	56.9	59.0	1.4	8.4	9.9	12.8	46 59.09	− 0.32	−67.32	−67.31	7 45 51.46	− 0.07
	21	12 Yr. Cat. 1879, S.P.	F.	26.7	11.6	3.8	27.2	16.2	3.7	27.9	19.6	4.7	54 15.71	− 4.38	. .	−67.33	20 53 4.00	− 0.72
	22	σ^2 Ursæ Majoris . .	F.	58.3	5.0	9.0	25.2	30.8	36.0	52.4	56.0	3.0	0 30.63	+ 0.94	. .	−67.33	8 59 24.24	− 0.03
	23	Uranus. . . .	F.	31.3	34.0	35.7	42.0	44.1	46.3	52.7	54.0	57.0	11 44.12	− 0.42	. .	−67.33	9 10 36.37	. .
	24	γ^1 Leonis . . .	F.	. .	. .	. .	12.4	14.5	16.8	21.0	22.7	25.4	14 12.35	− 0.38	−67.17	−67.35	10 13 4.62	− 0.20
	25	ρ Leonis . . .	F.	8.9	11.5	13.1	19.4	21.5	23.5	29.8	31.2	33.9	27 21.42	− 0.50	−67.29	−67.35	10 26 13.57	− 0.13
	26	Anonymous . .	F.	. .	. .	. .	. .	. .	. .	29.9	31.5	33.9	35 21.68	− 0.65	. .	−67.35	10 34 13.68	− 2.82
	27	Bessel's Zones 222	F.	. .	. .	. .	. .	. .	. .	49.0	50.7	52.7	35 40.72	− 0.65	. .	−67.35	10 34 32.72	− 2.82
	28	X, 14	F.	23.2	26.0	27.6	32.0	36.7	41.0	45.5	47.3	50.0	39 36.59	− 0.85	. .	−67.35	10 38 28.39	− 2.53
	29	l Leonis . . .	F.	36.3	38.9	40.4	46.7	48.7	50.8	57.2	58.7	1.3	43 48.78	− 0.49	−67.30	−67.35	10 42 40.94	− 0.05
17	30	Anonymous . .	S.	. .	. .	. .	. .	. .	. .	39.2	41.0	. .	35 31.16	− 0.72	. .	−68.19	10 34 22.25	− 2.95
	31	X, 13	S.	. .	. .	29.7	31.9	34.2	36.6	39.0	. .	. .	38 34.28	− 0.97	. .	−68.19	10 37 25.12	− 2.55
	32	α Ursæ Majoris . .	S.	42.3	47.9	51.0	4.2	8.5	13.4	26.3	29.5	35.2	57 8.70	+ 0.35	. .	−68.19	10 56 0.86	+ 0.08
	33	δ Leonis . . .	S.	22.9	25.7	27.3	33.9	36.0	38.3	44.9	46.5	49.3	8 36.09	− 0.50	−68.20	−68.19	11 7 27.40	− 0.05
	34	δ Crateris . . .	S.	1.4	4.2	5.7	12.0	14.1	16.2	22.7	24.0	26.7	14 14.11	− 0.84	−68.17	−68.20	11 13 5.07	− 0.05
	35	τ Leonis . . .	S.	26.8	29.3	30.9	. .	. .	. .	47.2	48.8	51.2	22 39.03	− 0.67	−68.18	−68.20	11 21 30.16	− 0.04
	36	Anonymous . .	S.	. .	. .	35.7	37.8	39.9	42.0	44.0	. .	. .	22 39.88	− 0.67	. .	−68.20	11 21 31.01	− 2.73
	37	η Virginis . .	S.	. .	. .	. .	. .	41.0	43.0	47.2	48.7	51.2	14 38.97	− 0.71	−68.29	−68.21	12 13 30.05	+ 0.00
	38	κ Draconis . .	S.	47.1	51.5	3.6	9.9	16.0	22.0	28.2	40.2	44.9	29 15.93	+ 0.86	. .	−68.21	12 28 8.58	0.00
	39	32^1 Camelopardalis .	S.	. .	. .	30.8	51.0	10.5	30.5	50.8	. .	. .	49 10.72	+ 4.81	. .	−68.22	12 48 7.31	− 7.86
	40	32^2 Camelopardalis .	S.	. .	. .	38.6	58.8	18.4	38.5	58.3	. .	. .	49 18.52	+ 4.81	. .	−68.22	12 48 15.11	− 0.06
	41	Polaris, S. P. .	S.	. .	. .	23.5	56.0	27.5	1.7	35.0	. .	. .	14 28.74	−24.82	. .	−68.22	1 12 55.70	− 0.72
	42	ε Bootis . . .	E.	25.2	28.2	29.8	36.7	39.0	41.4	48.2	50.0	52.8	40 39.03	− 0.50	−68.13	−68.22	14 39 30.31	− 0.11
	43	α^2 Libræ . . .	E.	. .	. .	1.0	3.2	5.4	7.5	9.6	. .	. .	45 5.34	− 0.94	−68.14	−68.22	14 43 56.18	− 0.09
	44	β Ursæ Minoris . .	E.	. .	. .	. .	9.9	17.6	25.5	40.9	46.8	56.2	52 9.96	+ 1.29	. .	−68.22	14 51 3.03	− 0.11
	45	β Libræ . . .	E.	11.8	14.4	15.9	22.1	24.3	26.4	32.7	34.0	36.6	11 21.24	− 0.88	−68.11	−68.23	15 10 15.13	− 0.12
	46	μ^1 Bootis . . .	E.	. .	. .	48.0	50.5	53.0	55.7	58.3	. .	. .	20 53.10	− 0.35	−68.11	−68.23	15 19 44.52	− 0.13
	47	γ^2 Ursæ Minoris . .	E.	29.4	34.0	47.8	54.5	1.4	8.0	14.8	28.3	33.0	22 1.24	+ 0.99	. .	−68.23	15 20 54.00	+ 0.03
	48	α Coronæ Borealis .	E.	17.0	19.9	21.6	28.7	31.0	33.2	40.0	41.7	44.7	30 30.87	− 0.50	−68.15	−68.23	15 29 22.14	− 0.08
	49	α Serpentis . . .	E.	1.6	4.2	5.8	12.0	14.0	16.0	22.3	23.8	26.4	39 14.01	− 0.72	−68.21	−68.23	15 38 5.06	0.00

4, 21, 32, 38, 39, 40, 47. Bisections at sets B and D.
7, 9, 15, 17, 18, 26. Wire A used.
15. Observed for Gerda.
27, 36. Wire B used.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	311 54	10 14.3	27.0	19.7	28.4	37	. .	. .	226	. .	. .	78.8	48 2 38.0	. .	+ 1 9.2	99 10 8.4	. .
2	327 14	16.6	0.0	22.2	29.6	37	372	396	. .	. .	. .	78.8	32 42 42.7	. .	+ 40.0	83 49 43.9	+ 0.2
3	349 26	25.0	8.5	29.5	6.8	31	422	432	. .	. .	. .	78.8	10 29 19.3	. .	+ 11.6	61 35 52.1	+ 0.6
4	62 42	19.2	1.0	24.2	2.6	34	. .	. .	. .	596	596	78.8	297 14 2.0	. .	− 2 0.8	348 18 22.4	+ 0.9
5	335 32	7.7	19.8	12.4	18.8	34	. .	. .	. .	502	496	78.8	24 23 48.7	24.4	+ 28.3	75 30 38.2	+ 0.2
6	49 40	13.5	24.4	17.8	23.2	33	968	970	970	964	970	78.8	310 16 1.0	22.5	− 1 13.9	1 21 8.3	− 0.1
7	330 34	16.7	29.5	22.5	29.4	38	. .	334	. .	352	. .	78.8	29 20 24.2	19.0	+ 35.5	80 27 20.9	− 2.7
8	54 24	25.8	6.2	0.6	6.7	32	. .	076	068	066	. .	78.8	305 31 29.0	. .	− 1 28.4	356 36 21.8	− 0.6
9	346 2	19.4	29.8	23.2	29.5	38	. .	816	. .	830	. .	78.8	13 52 32.6	. .	+ 15.6	64 59 9.4	− 1.3
10	337 34	21.0	4.5	25.9	2.4	37	. .	. .	. .	734	720	78.8	22 22 52.3	. .	+ 26.0	73 29 39.5	+ 2.3
11	48 16	14.4	26.4	18.0	24.4	37	612	602	588	574	582	78.8	311 40 42.2	. .	− 1 10.8	2 45 52.6	0.0
12	348 2	14.6	25.0	19.4	26.3	33	. .	278	. .	288	. .	78.8	11 53 36.8	. .	+ 13.3	63 0 11.3	− 1.1
13	292 16	14.6	26.1	19.8	25.6	31	. .	282	. .	268	. .	78.8	67 39 5.9	. .	+ 2 33.0	118 48 0.1	+ 0.8
14	294 54	16.8	28.8	22.2	28.9	37	. .	982	. .	998	. .	78.8	65 2 51.4	. .	+ 2 15.4	116 11 28.0	− 3.7
15	341 12	19.5	1.4	25.0	0.2	32	. .	810	. .	810	. .	78.8	18 41 1.6	. .	+ 21.4	69 47 44.2	. .
16	353 12	11.2	24.6	17.2	24.5	34	. .	178	. .	172	. .	78.8	6 43 48.5	18.0	+ 7.5	57 50 17.2	− 0.5
17	345 40	11.0	22.6	14.8	22.9	40	. .	. .	. .	150	. .	78.8	14 14 45.5	. .	+ 16.1	65 21 22.8	− 1.0
18	345 40	11.0	22.6	14.8	22.9	43	. .	. .	. .	334	. .	78.8	14 15 34.2	. .	+ 16.1	65 22 11.5	. .
19	349 22	17.5	28.9	22.0	28.1	33	. .	. .	. .	865	888	78.8	10 33 49.1	. .	+ 11.8	61 40 22.1	+ 1.6
20	348 8	23.4	4.8	27.3	2.8	34	750	754	. .	. .	. .	78.8	11 48 7.3	. .	+ 13.2	62 54 41.7	+ 1.3
21	60 56	15.6	26.2	19.5	26.1	37	206	. .	. .	. .	122	78.8	299 0 36.1	. .	− 1 53.9	350 5 3.4	+ 0.9
22	28 40	10.0	22.4	15.3	21.4	34	. .	762	. .	750	. .	78.8	331 15 55.8	. .	− 34.7	22 21 42.3	− 2.4
23	338 4	14.2	26.1	17.8	25.8	36	. .	236	. .	242	. .	78.8	21 52 21.6	17.2	+ 25.5	72 59 8.3	. .
24	341 32	19.5	29.7	22.5	29.9	38	. .	. .	. .	030	010	78.8	18 24 53.8	. .	+ 20.1	69 31 35.1	+ 0.1
25	331 0	9 28.0	11.9	3.4	10.1	35	850	864	. .	. .	. .	78.8	28 56 0.3	. .	+ 33.4	80 2 54.9	− 3.8
26	316 14	10 5.7	18.4	11.6	17.9	35	. .	126	. .	. .	. .	78.8	43 39 23.6	. .	+ 1 0.4	94 46 45.2	−10.0
27	316 14	5.7	18.4	11.6	17.9	41	. .	. .	. .	266	258	78.8	43 46 4.2	. .	+ 1 0.6	94 53 26.0	−10.0
28	297 44	11.6	22.0	15.6	21.3	31	. .	958	. .	980	. .	78.8	62 11 12.6	. .	+ 1 59.5	113 19 33.3	− 4.1
29	332 16	15.7	27.6	20.2	27.3	37	. .	296	. .	286	. .	78.8	27 40 39.4	17.5	+ 33.2	78 47 33.8	− 0.3
30	320 10	20.3	3.2	25.2	2.6	38	. .	. .	. .	. .	348	76.9	39 46 59.1	. .	+ 50.3	90 54 10.6	−11.8
31	294 26	27.8	11.1	3.8	9.4	33	. .	. .	. .	180	128	76.9	65 29 47.0	. .	+ 2 11.9	116 38 20.1	− 3.6
32	23 28	12.6	27.4	19.2	24.0	37	967	. .	. .	. .	935	76.9	336 28 45.8	32.4	− 26.3	27 34 40.7	− 0.7
33	342 16	24.3	8.9	29.3	5.9	37	. .	460	. .	446	. .	76.9	17 40 49.4	. .	+ 19.3	68 47 29.9	− 1.3
34	306 58	14.6	29.3	20.5	27.6	35	. .	. .	. .	749	755	76.9	52 58 14.4	. .	+ 1 20.2	103 55 55.8	− 1.5
35	324 36	23.2	7.9	28.3	5.3	35	010	. .	. .	. .	970	76.9	35 20 10.7	. .	+ 43.0	86 27 14.9	− 0.6
36	324 36	23.2	7.9	28.3	5.3	31	. .	0.0	. .	964	. .	76.9	35 21 42.8	31.6	+ 43.0	86 28 47.0	−15.8
37	321 6	19.5	3.8	24.0	0.6	38	. .	. .	. .	. .	693	76.9	38 51 3.6	. .	+ 48.9	89 58 13.7	− 1.1
38	31 30	14.0	28.9	23.6	26.0	34	320	. .	. .	. .	308	76.9	328 25 52.5	31.0	− 37.3	19 31 36.4	− 2.5
39	45 8	16.1	29.9	20.9	26.1	39	. .	059	. .	065	. .	76.9	314 49 5.4	. .	− 1 1.1	5 54 25.5	−21.3
40	45 8	16.1	29.9	20.9	26.1	40	. .	271	. .	243	. .	76.9	314 49 23.7	. .	− 1 1.1	5 54 43.8	− 3.0
41	52 22	21.5	5.1	27.0	1.2	33	800	. .	731	. .	745	76.9	307 33 49.1	30.5	− 1 18.9	358 38 51.4	− 0.6
42	348 38	28.0	12.2	5.0	7.5	31	. .	750	. .	740	. .	77.5	11 17 26.2	. .	+ 12.1	62 23 59.5	− 0.6
43	305 32	14.2	0.5	22.3	28.0	32	. .	660	. .	610	. .	77.5	54 23 27.7	. .	+ 1 24.6	105 31 13.5	+ 0.8
44	35 42	15.3	29.0	22.5	25.9	37	. .	. .	. .	230	200	77.5	324 14 39.6	. .	− 43.7	15 20 17.1	− 2.0
45	312 8	23.9	8.8	1.7	6.2	33	. .	185	. .	170	. .	77.5	47 47 44.9	33.0	+ 1 6.8	98 55 12.9	+ 0.4
46	358 22	17.0	2.5	26.8	29.0	37	680	670	. .	. .	. .	77.5	1 4 47.6	. .	+ 1.1	52 11 9.9	− 0.8
47	33 18	25.0	9.7	4.0	5.0	33	480	. .	. .	. .	440	77.5	326 37 50.3	. .	− 39.9	17 43 31.6	+ 0.5
48	348 12	21.5	5.5	29.5	3.0	39	. .	. .	. .	800	760	77.5	11 45 23.9	. .	+ 12.6	62 51 57.7	+ 1.4
49	327 52	11.8	27.1	20.4	23.9	34	. .	430	. .	400	. .	77.5	32 3 52.1	. .	+ 37.9	83 10 51.2	+ 0.2

No.	Barom.	At. Ther.
	in.	°
5	30.47	27.5
6	30.47	26.5
7	30.48	24.0
16	30.47	24.0
23	30.46	21.5
29	30.44	23.5
32	30.02	34.0
41	30.07	31.5
45	30.12	33.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
1	−43 11.6	− 15 55.1	. .	− 59 6.7
23	− 0.2	. .	. .	− 0.2

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Dec. 17	1	ε Serpentis . . .	E.	30.1	32.7	34.2	40.5	42.5	44.5	50.6	52.1	54.9	45 42.46	− 0.74	−68.21	−68.23	15 44 33.49	− 0.02
	2	ε Coronæ Borealis .	E.	17.9	21.0	22.7	29.6	31.9	34.2	41.0	42.6	45.6	53 31.83	− 0.50	. .	−68.23	15 52 23.10	− 0.14
	3	β^1 Scorpii	E.	4.5	7.2	8.8	15.2	17.3	19.6	26.0	27.7	30.5	59 17.42	− 0.98	−68.17	−68.24	15 58 8.20	− 0.04
	4	δ Ophiuchi . . .	E.	42.6	45.3	46.9	53.0	55.0	57.0	3.1	4.7	7.3	8 54.99	− 0.82	−68.19	−68.24	16 7 45.93	− 0.03
	5	τ Herculis . . .	E.	47.9	51.6	53.8	2.7	5.6	8.6	17.6	19.7	23.5	17 5.67	− 0.19	. .	−68.24	16 15 57.24	+ 0.22
	6	α Scorpii	E.	38.3	41.0	42.8	49.5	51.9	54.3	0.9	2.8	5.6	22 51.90	− 1.06	−68.25	−68.24	16 21 42.60	0.00
	7	ζ Ophiuchi . . .	E.	11.4	14.0	15.5	21.7	23.8	25.8	32.0	33.7	36.2	31 23.79	− 0.89	−68.19	−68.24	16 30 14.66	− 0.05
	8	η Herculis . . .	E.	27.6	30.9	32.8	40.7	43.3	46.0	53.9	55.8	59.0	39 43.33	− 0.33	−68.21	−68.24	16 38 34.76	− 0.02
	9	Venus II, S. . .	E.	34.6	37.4	38.9	45.5	47.6	49.7	56.0	57.6	0.6	43 47.54	− 0.99	. .	−68.25	16 42 38.30	− 2.23
	10	Venus N. . . .	E.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	11	κ Ophiuchi . . .	E.	. .	. .	50.3	52.3	54.4	56.5	0.6	2.2	4.7	52 52.32	− 0.69	−68.32	−68.25	16 51 43.38	+ 0.11
18	12	Sun I, N. . . .	E.	15.9	18.6	20.3	27.0	29.1	31.5	38.0	39.7	42.6	45 29.19	− 1.01	. .	−68.26	17 44 19.92	. .
	13	Sun II, S. . . .	E.	38.1	41.0	42.9	49.5	51.8	54.0	0.6	2.2	5.0	47 51.68	− 1.01	. .	−68.26	17 46 42.41	. .
	14	δ Ursæ Minoris .	E.	. .	. .	8.0	45.0	20.0	53.0	26.0	. .	. .	13 18.60	+ 8.90	. .	−68.26	18 12 19.24	− 0.08
	15	α Lyræ	E.	32.2	36.4	38.4	46.4	49.0	51.5	59.3	1.3	4.6	33 48.90	− 0.34	−68.29	−68.27	18 32 40.29	+ 0.04
	16	β Lyræ	E.	19.9	23.0	24.9	32.1	34.6	37.0	44.3	46.0	49.0	46 34.53	− 0.42	−68.23	−68.27	18 45 25.84	− 0.01
	17	ζ Aquilæ	E.	34.4	37.0	38.6	44.9	47.0	49.0	55.4	56.9	59.6	0 46.98	− 0.65	−68.29	−68.27	18 59 38.06	+ 0.10
	18	δ Aquilæ	E.	. .	. .	. .	18.9	21.0	23.1	27.2	28.7	31.3	20 18.99	− 0.76	−68.28	−68.28	19 19 9.95	+ 0.05
	19	γ Aquilæ	E.	13.7	16.3	17.9	24.0	26.1	28.2	34.4	36.0	38.6	41 26.13	− 0.69	−68.17	−68.28	19 40 17.16	− 0.08
	20	α Aquilæ	E.	35.8	38.4	40.0	46.1	48.2	50.3	56.5	58.0	0.6	45 48.21	− 0.70	−68.18	−68.28	19 44 39.23	− 0.06
	21	ε Piscium . . .	E.	24.0	26.6	28.0	34.3	36.4	38.4	44.6	46.0	48.7	57 36.33	− 0.72	−68.37	−68.35	0 56 27.26	+ 0.04
	22	Polaris. . . .	E.	. .	. .	48.0	15.0	42.0	9.5	36.0	. .	. .	13 42.10	+23.69	. .	−68.35	1 12 57.41	+ 1.30
	23	θ^1 Ceti	E.	43.5	46.0	47.6	53.8	55.9	58.0	4.2	5.7	8.4	18 55.90	− 0.87	−68.39	−68.35	1 17 46.68	+ 0.00
	24	38 Cassiopeæ . . .	E.	29.8	37.0	41.5	59.1	5.0	11.0	28.2	32.8	40.0	23 4.93	+ 0.74	. .	−68.35	1 21 57.32	+ 0.53
	25	η Piscium . . .	E.	. .	. .	52.4	54.6	56.7	58.8	0.9	. .	. .	25 56.68	− 0.64	−68.35	−68.35	1 24 47.69	+ 0.07
	26	ο Piscium . . .	E.	44.3	46.9	48.5	54.7	56.8	58.8	5.0	6.0	9.2	39 56.76	− 0.70	−68.35	−68.36	1 38 47.70	− 0.04
	27	Neptune . . .	E.	1.3	3.9	5.5	11.6	13.7	15.8	22.0	23.6	26.0	48 13.71	− 0.70	. .	−68.36	1 47 4.65	. .
	28	Moon I, S. . .	E.	45.0	47.8	49.3	55.7	57.9	0.0	6.2	7.9	10.7	51 57.83	− 0.68	. .	−68.36	1 50 48.79	+69.51
	29	α Arietis	E.	3.5	6.2	8.0	14.5	16.8	19.0	25.6	27.3	30.2	1 16.79	− 0.55	−68.41	−68.36	2 0 7.88	− 0.00
	30	ξ^1 Ceti.	E.	19.5	22.0	23.6	29.9	31.9	34.0	40.2	41.7	44.3	7 3.90	− 0.71	−68.47	−68.36	2 6 22.83	+ 0.15
	31	ι Cassiopeæ . . .	E.	24.7	31.0	34.9	50.8	55.9	1.0	16.7	20.5	27.0	19 55.83	+ 0.54	. .	−68.36	2 18 48.01	+ 0.38
	32	5 Ursæ Minoris, S.P.	E.	49.5	38.8	32.5	6.8	58.2	49.6	23.6	17.2	6.1	28 58.03	− 2.17	. .	−68.36	14 27 46.50	− 0.36
	33	Pallas	E.	22.2	25.1	27.0	33.7	36.0	38.5	45.5	47.1	50.0	33 36.12	− 1.08	. .	−68.36	2 32 26.68	. .
	34	γ Ceti.	E.	46.7	49.3	50.9	57.0	59.1	1.2	7.3	8.9	11.5	37 59.10	− 0.76	−68.48	−68.37	2 36 49.97	+ 0.11
	35	Juno	E.	44.4	47.0	48.6	54.7	56.8	58.8	4.9	6.5	9.0	46 56.74	− 0.84	. .	−68.37	2 45 47.53	. .
	36	β Ursæ Minoris, S. P.	E.	. .	. .	30.2	22.4	14.5	6.5	59.5	. .	. .	52 14.62	− 2.92	. .	−68.37	14 51 3.33	+ 0.16
	37	α Ceti.	E.	42.0	44.6	46.2	52.3	54.3	56.4	2.6	4.0	6.7	56 54.34	− 0.75	−68.36	−68.37	2 55 45.22	+ 0.01
	38	48 Cephei	E.	56.6	4.0	22.6	31.5	40.7	49.8	59.0	17.9	24.4	5 40.72	+ 1.72	. .	−68.37	3 4 31.07	+ 0.31
	39	ζ Arietis	E.	39.4	42.2	43.8	50.3	52.5	54.7	1.3	3.0	5.7	8 52.54	− 0.58	−68.47	−68.38	3 7 43.58	+ 0.05
	40	α Persei	E.	14.6	18.5	20.9	30.4	33.5	36.6	46.0	48.5	52.4	16 33.49	− 0.13	. .	−68.38	3 15 24.98	+ 0.10
	41	γ^2 Ursæ Minoris, S. P.	E.	45.0	36.9	31.7	11.4	4.9	58.0	38.1	33.1	24.7	22 4.87	− 2.62	. .	−68.38	15 20 53.87	− 0.12
	42	Vesta	E.	. .	. .	47.9	50.0	52.0	54.0	56.3	. .	. .	0 52.04	− 0.64	. .	−68.39	3 59 43.01	. .
	43	γ Tauri	E.	37.8	40.5	42.2	48.6	50.7	52.9	59.0	0.7	3.3	13 50.63	− 0.63	−68.48	−68.39	4 12 41.61	+ 0.10
	44	ε Tauri	E.	15.9	18.6	20.3	26.7	28.8	31.0	37.6	39.3	41.9	22 28.90	− 0.60	−68.51	−68.39	4 21 19.91	+ 0.11
	45	α Tauri	E.	. .	. .	. .	. .	56.9	59.0	2.0	4.7	7.4	29 54.64	− 0.62	−68.38	−68.39	4 28 45.63	− 0.03
	46	Astræa. . . .	E.	40.8	43.0	45.1	51.5	53.5	55.6	2.0	3.6	6.2	38 53.51	− 0.65	. .	−68.39	4 37 44.50	. .
	47	9 Camelopardalis .	E.	17.6	24.0	27.8	43.0	48.0	53.2	8.2	11.9	18.2	42 47.99	+ 0.49	. .	−68.39	4 41 40.09	+ 0.26
	48	ι Aurigæ . . .	E.	46.4	49.4	51.1	58.5	1.0	3.4	10.6	12.5	15.6	50 0.94	− 0.43	−68.45	−68.40	4 48 52.11	+ 0.01
	49	Elpis	E.	51.6	54.6	56.0	2.2	4.2	6.2	12.1	14.0	16.3	44 4.13	− 0.70	. .	−68.40	5 42 55.03	. .
	50	α Orionis . . .	E.	21.8	24.5	25.9	32.1	34.2	36.3	42.6	43.9	46.5	49 34.20	− 0.72	−68.39	−68.40	5 48 25.08	− 0.04

26. Telescope micrometer reading decreased five revolutions in reduction.
32. Bisections at sets B and D.
36. Bisections at set C.
45. Telescope micrometer reading increased one revolution in reduction.
49. Wire A used.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	325 54	10 17.1	3.3	25.3	0.3	33	. .	415	. .	380	. .	77.5	34 1 42.2	. .	+ 40.8	85 8 44.2	− 0.5
2	348 18	25.2	9.4	2.2	4.8	38	. .	600	. .	530	. .	77.5	11 39 5.4	. .	+ 12.5	62 45 39.1	− 0.5
3	301 36	23.7	9.6	2.1	6.7	32	. .	970	. .	980	. .	77.5	58 19 42.1	. .	+ 1 37.6	109 27 40.9	− 1.4
4	317 42	20.5	5.4	29.5	1.9	38	. .	460	. .	485	. .	77.5	42 15 2.7	. .	+ 54.8	93 22 18.7	+ 0.3
5	7 40	24.0	4.3	27.8	1.3	39	. .	265	. .	225	. .	77.5	352 17 14.9	. .	− 8.2	43 23 27.9	+ 0.1
6	294 56	21.3	7.4	0.0	3.7	36	. .	910	. .	840	. .	77.5	65 0 39.4	. .	+ 2 8.7	116 9 9.3	− 1.2
7	310 44	17.3	4.0	27.2	0.5	31	. .	675	. .	635	. .	77.5	49 11 16.2	. .	+ 1 9.7	100 18 47.1	+ 1.0
8	0 12	21.0	6.3	0.3	2.7	34	. .	995	. .	980	. .	77.5	359 44 10.4	. .	− 0.3	50 50 31.3	+ 3.0
9	301 22	16.4	2.2	24.2	28.1	39	300	. .	. .	. .	350	77.5	58 35 11.4	. .	+ 1 38.3	109 43 10.9	. .
10	301 22	16.4	2.2	24.2	28.1	35	. .	298	. .	305	. .	77.5	58 34 9.9	. .	+ 1 38.2	109 42 9.3	. .
11	330 38	24.5	9.6	2.6	6.5	37	. .	. .	. .	790	780	77.5	29 18 56.6	. .	+ 34.6	80 25 52.4	+ 2.5
12	297 56	15.7	2.0	22.5	28.8	37	000	020	. .	. .	. .	77.5	62 0 35.2	. .	+ 1 52.3	113 8 48.7	. .
13	297 24	6.4	21.1	12.7	19.2	39	. .	. .	. .	640	735	77.5	62 33 6.9	38.0	+ 1 54.9	113 41 23.0	. .
14	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. . .	. .
15	359 40	15.8	0.5	24.8	28.0	33	. .	170	. .	115	. .	77.5	0 15 36.8	. .	+ 0.3	51 21 58.3	− 0.5
16	354 16	18.3	4.6	25.4	0.9	36	. .	595	. .	575	. .	77.5	5 40 32.0	. .	+ 6.0	56 46 59.2	+ 1.7
17	334 44	14.5	29.5	22.2	28.2	36	. .	860	. .	830	. .	77.5	25 12 32.2	. .	+ 28.1	76 19 21.5	+ 1.1
18	323 56	20.3	6.6	0.0	4.5	38	. .	. .	. .	175	210	77.5	36 0 59.5	. .	+ 43.4	87 8 4.1	− 0.7
19	331 22	18.0	4.0	27.4	29.0	36	. .	985	. .	920	. .	77.5	28 34 37.3	. .	+ 32.5	79 41 31.0	+ 1 7
20	329 36	17.0	2.5	25.3	0.0	37	770	775	. .	680	690	77.5	30 20 48.5	. .	+ 34.9	81 27 44.6	+ 1.4
21	328 16	22.8	8.2	0.3	4.5	34	. .	195	. .	170	. .	79.7	31 40 1.4	34.0	+ 37.2	82 46 59.8	+ 1.7
22	49 40	18.6	1.5	23.3	26.5	34	365	. .	380	. .	375	79.7	310 15 58.1	. .	− 1 11.0	1 21 8.3	+ 0.4
23	312 14	19.5	2.3	24.5	29.5	35	. .	870	. .	840	. .	79.7	47 42 22.0	. .	+ 1 6.2	98 49 49.4	+ 3.3
24	30 38	11 2.2	16.8	8.6	10.6	28	. .	660	. .	670	. .	79.7	329 16 45.9	. .	− 35.8	20 22 31.3	+ 1.5
25	335 44	10 23.3	7.1	28.2	5.2	30	. .	. .	. .	625	555	79.7	24 11 6.4	. .	+ 27.1	75 17 54.7	+ 3.3
26	329 34	21.3	5.6	28.5	3.2	36	. .	745	. .	725	. .	79.7	30 21 22.2	. .	+ 35.3	81 29 18.7	+ 2.4
27	330 12	18.8	2.6	25.7	1.2	34	. .	290	. .	270	. .	79.7	29 43 58.6	. .	+ 34.4	80 50 54.2	. .
28	332 22	19.6	4.5	26.2	0.3	37	890	700	485	295	030	79.7	27 34 48.2	. .	+ 31.5	78 41 40.9	. .
29	343 54	17.2	1.1	23.5	28.8	30	. .	640	. .	640	. .	79.7	16 1 1.0	. .	+ 17.3	67 7 39.5	+ 1.5
30	329 18	22.5	8.3	0.5	4.8	31	. .	865	. .	895	. .	79.7	30 37 26.3	. .	+ 35.7	81 44 23.2	+ 1.0
31	27 52	20.0	3.5	24.5	27.8	32	. .	805	. .	750	. .	79.7	332 3 35.7	. .	− 32.0	23 9 24.9	− 0.2
32	61 46	22.0	5.5	27.2	0.6	36	760	. .	. .	. .	600	79.7	295 10 36.7	. .	− 2 7.6	346 14 50.3	+ 3.1
33	293 28	29.0	11.6	3.0	12.2	30	. .	580	. .	615	. .	79.7	66 27 11.3	. .	+ 2 17.5	117 35 50.0	− 4.4
34	323 46	17.2	2.6	23.8	29.8	35	. .	900	. .	920	. .	79.7	36 10 21.0	. .	+ 44.1	87 17 26.3	− 1.5
35	316 4	20.3	3.2	25.3	29.8	36	. .	460	. .	400	. .	79.7	43 52 31.5	. .	+ 57.9	94 59 50.6	− 5.1
36	66 20	26.0	9.5	0.7	3.9	32	630	. .	. .	. .	640	79.7	293 35 38.8	. .	− 2 17.3	344 39 42.7	+ 1.9
37	324 38	20.9	4.8	28.7	3.3	30	. .	230	. .	200	. .	79.7	35 16 58.6	. .	+ 42.7	86 24 2.5	− 0.3
38	38 18	11 1.5	15.6	7.5	9.8	33	. .	075	. .	065	. .	79.7	321 37 53.0	. .	− 47.7	12 43 26.5	+ 1.2
39	341 38	10 24.3	9.2	1.2	3.8	35	. .	650	. .	620	. .	79.7	18 18 24.4	. .	+ 20.0	69 25 5.6	+ 2.2
40	10 26	21.8	6.5	27.5	1.3	29	. .	305	. .	345	. .	79.7	349 28 45.2	. .	− 11.2	40 34 55.2	− 0.2
41	68 44	17.8	0.5	23.0	25.2	37	. .	215	. .	260	. .	79.7	291 12 39.8	. .	− 2 34.4	342 16 26.6	− 2.1
42	335 40	17.6	2.5	22.9	27.0	33	. .	. .	. .	140	120	79.7	24 15 39.3	. .	+ 27.2	75 22 27.7	− 2.2
43	336 22	16.8	2.2	22.2	29.2	33	. .	100	. .	085	. .	79.7	23 33 38.4	. .	+ 26.4	74 40 26.0	+ 1.1
44	339 56	22.5	8.8	27.9	3.0	30	. .	550	. .	490	. .	79.7	19 59 4.5	. .	+ 22.0	71 5 47.7	+ 2.0
45	337 18	11 3.5	18.5	8.9	14.3	31	. .	. .	. .	435	400	79.7	22 37 44.4	. .	+ 25.2	73 44 30.8	+ 2.0
46	334 48	10 26.0	11.3	2.0	6.6	37	. .	275	. .	210	. .	79.7	25 8 50.9	33.0	+ 28.4	76 15 40.5	− 2.8
47	27 10	27.2	10.7	2.4	5.9	35	. .	235	. .	200	. .	79.7	332 46 20.6	. .	− 31.1	23 52 10.7	− 0.1
48	354 0	19.4	5.0	27.0	0.3	32	. .	075	. .	045	. .	79.7	5 55 25.6	. .	+ 6.3	57 1 53.1	+ 0.9
49	330 34	20.0	4.2	27.2	2.3	36	. .	160	. .	030	. .	79.7	29 19 54.6	. .	+ 34.1	80 26 49.9	− 2.7
50	328 26	20.5	5.0	26.7	2.0	34	. .	125	. .	090	. .	79.7	31 29 57.3	. .	+ 37.2	82 36 55.7	− 1.3

No.	Barom.	At. Ther.
	in.	°
13	30.08	36.5
21	30.00	37.5

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
9	− 27.2	− 30.9	+ 0.2	− 57.9
10	− 27.2	+ 30.9	. .	+ 3.7
12	− 7.9	+ 16 17.1	. .	+ 16 9.2
13	− 8.0	− 16 17.1	. .	− 16 25.1
27	− 0.1	. .	. .	− 0.1
28	−27 33.7	− 16 22.1	. .	− 43 55.8

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Dec. 18	1	δ Ursæ Minoris, S. P.	E.	. .	48.5	13.0	38.5	2.5	29.5	19.5	55.0	11.5	13 38.42	−10.51	. .	−68.41	18 12 19.50	+ 0.23
	2	μ Geminorum . .	E.	20.5	23.2	24.8	31.5	33.7	36.0	42.6	44.2	47.0	16 33.72	− 0.56	−68.42	−68.41	6 15 24.75	− 0.03
	3	Pales	E.	52.1	55.2	57.0	3.5	5.7	8.0	14.7	16.7	19.3	22 5.80	− 0.53	. .	−68.41	6 20 56.86	. .
	4	γ Geminorum . .	E.	26.4	29.2	30.8	37.2	39.3	41.4	47.8	49.5	52.1	31 39.30	− 0.62	−68.42	−68.41	6 30 30.27	− 0.02
	5	α Canis Majoris. .	E.	35.8	38.5	40.0	46.5	48.6	50.7	57.0	58.6	1.4	40 48.57	− 0.95	−68.51	−68.42	6 39 39.20	+ 0.01
	6	Ceres	E.	53.9	56.8	58.9	5.4	7.6	10.0	16.9	18.6	21.5	44 7.73	− 0.50	. .	−68.42	6 42 58.81	. .
	7	α Coronæ Borealis .	F.	17.6	20.4	22.1	28.9	31.1	33.4	40.4	42.0	44.9	30 31.20	− 0.45	−68.51	−68.55	15 29 22.20	− 0.04
	8	α Serpentis . . .	F.	2.0	4.6	6.0	12.2	14.3	16.4	22.6	24.0	26.7	39 14.31	− 0.70	−68.51	−68.55	15 38 5.06	− 0.02
	9	ζ Ursæ Minoris . .	F.	. .	. .	16.0	26.7	36.3	46.6	56.4	. .	. .	49 36.40	+ 2.17	. .	−68.55	15 48 30.02	+ 0.08
	10	β Scorpii. . . .	F.	4.9	7.7	9.3	15.7	17.9	20.0	26.5	28.0	30.7	59 17.86	− 0.99	−68.58	−68.56	15 58 8.31	+ 0.05
	11	δ Ophiuchi . . .	F.	43.2	47.3	51.3	53.3	55.4	57.5	59.5	3.6	7.8	8 55.43	− 0.80	−68.62	−68.56	16 7 46.07	+ 0.08
	12	τ Herculis . . .	F.	48.3	51.9	54.2	3.2	6.1	9.2	18.0	20.2	24.0	17 6.12	− 0.12	. .	−68.56	16 15 57.44	+ 0.40
	13	α Scorpii	F.	38.4	41.3	43.0	50.0	52.5	54.6	1.5	3.0	5.6	22 52.21	− 1.07	−68.53	−68.56	16 21 42.58	− 0.04
	14	η Draconis . . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	15	ζ Ophiuchi . . .	F.	11.6	14.3	15.9	22.0	24.1	26.2	32.4	34.0	36.5	31 24.11	− 0.88	−68.50	−68.56	16 30 14.67	− 0.06
	16	η Herculis . . .	F.	27.8	31.2	33.1	41.0	43.7	46.4	54.4	56.2	59.8	39 43.73	− 0.26	−68.66	−68.57	16 38 34.90	+ 0.10
	17	Venus II, S. . .	F.	57.0	59.8	1.4	7.8	10.0	12.2	18.6	20.2	22.9	42 9.99	− 0.99	. .	−68.57	16 41 0.43	− 2.19
	18	Venus N. . . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	19	Mercury II, N. .	F.	54.0	56.7	58.3	. .	. .	. .	16.0	17.6	20.4	47 7.17	− 1.02	. .	−68.57	16 45 57.58	− 0.18
	20	Mercury S. . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
19	21	ζ Aquilæ	F.	34.7	37.4	39.0	43.2	47.3	50.5	55.8	57.4	0.0	0 47.37	− 0.61	−68.72	−68.60	18 59 38.16	+ 0.20
	22	γ Aquilæ	F.	14.0	16.7	18.3	24.6	26.7	28.7	34.9	36.4	39.0	41 26.59	− 0.66	−68.66	−68.61	19 40 17.32	+ 0.08
	23	α Aquilæ	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	24	β Aquilæ	F.	5.8	8.3	9.9	. .	. .	. .	26.3	27.8	30.4	50 18.07	− 0.70	−68.71	−68.61	19 49 8.76	+ 0.13
	25	Polaris . . .	F.	. .	. .	. .	. .	38.0	6.0	33.0	. .	. .	13 39.20	+24.21	. .	−68.68	1 12 54.73	− 0.62
	26	Neptune . . .	F.	58.8	1.5	3.0	9.2	11.3	13.5	19.5	21.2	23.8	48 11.31	− 0.70	. .	−68.69	1 47 1.92	. .
	27	β Arietis	F.	. .	. .	. .	. .	55.7	57.9	2.2	3.8	6.5	48 53.49	− 0.58	−68.68	−68.69	1 47 44.22	+ 0.01
	28	α Arietis	F.	. .	. .	. .	. .	. .	. .	25.8	27.4	30.2	1 16.90	− 0.55	−68.53	−68.69	2 0 7.66	− 0.15
	29	ξ^1 Ceti.	F.	19.7	22.4	23.9	30.0	32.0	34.1	40.3	41.9	44.5	7 32.09	− 0.71	−68.66	−68.69	2 6 22.69	+ 0.01
	30	ι Cassiopeæ . . .	F.	24.6	31.1	35.0	50.6	55.9	1.0	16.6	20.4	27.0	18 55.80	+ 0.58	. .	−68.69	2 18 47.69	+ 0.09
	31	Pallas	F.	15.4	18.2	20.0	26.8	29.0	31.4	38.3	40.0	42.8	33 29.10	− 1.10	. .	−68.70	2 32 19.30	. .
	32	γ Ceti.	F.	47.1	49.6	51.1	57.2	59.4	1.4	7.5	9.0	11.6	37 59.32	− 0.77	−68.69	−68.70	2 36 49.85	− 0.01
	33	Juno	F.	53.8	56.3	57.9	4.0	6.0	8.1	14.3	15.8	18.2	47 6.04	− 0.85	. .	−68.70	2 45 56.49	. .
	34	Moon S. . . .	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	35	η Tauri	F.	59.6	2.5	4.2	10.0	13.1	15.4	22.1	23.7	26.4	41 13.10	− 0.54	−68.67	−68.71	3 40 3.85	− 0.04
	36	ζ Ursæ Minoris, S. P.	F.	. .	. .	2.0	52.0	42.3	32.0	22.2	. .	. .	49 42.10	− 3.62	. .	−68.71	15 48 29.77	− 0.19
	37	Vesta	F.	50.0	52.2	53.6	0.1	2.2	4.3	10.7	12.3	14.9	3 2.26	− 0.64	. .	−68.72	4 1 52.90	. .
	38	ε Tauri	F.	16.0	18.7	20.3	27.0	29.1	31.3	37.6	39.3	42.0	22 29.03	− 0.60	−68.64	−68.72	4 21 19.71	− 0.09
20	39	γ^2 Ursæ Minoris. .	Sk.	22.0	30.5	35.2	55.3	1.9	8.5	29.2	34.3	42.1	22 2.11	+ 1.16	. .	−68.91	15 20 54.36	+ 0.26
	40	α Coronæ Borealis .	Sk.	18.0	20.9	22.6	29.5	31.8	34.0	41.0	42.7	45.7	30 31.80	− 0.54	−68.97	−68.91	15 29 22.35	+ 0.06
	41	α Serpentis . . .	Sk.	2.6	5.1	6.6	12.8	15.0	17.0	23.0	24.6	27.3	39 14.89	− 0.79	−68.95	−68.92	15 38 5.18	+ 0.05
	42	ε Serpentis . . .	Sk.	31.0	33.7	35.6	41.3	43.4	45.4	51.5	53.0	55.6	45 43.32	− 0.81	−68.93	−68.92	15 44 33.59	+ 0.01
	43	ζ Ursæ Minoris. .	Sk.	. .	. .	16.5	26.9	36.8	46.9	56.4	. .	. .	49 36.70	+ 2.18	. .	−68.92	15 48 29.96	− 0.08
	44	Venus II, S. . .	Sk.	8.5	11.3	13.0	19.6	21.6	23.7	30.2	31.7	34.6	39 21.58	− 1.08	. .	−68.92	16 38 11.58	− 2.13
	45	Venus N. . . .	Sk.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	46	Mercury C. . .	Sk.	38.8	41.6	43.2	49.9	52.2	54.4	0.9	2.7	5.6	59 52.14	− 1.13	. .	−68.93	16 58 42.08	− 0.07
21	47	Sun I, S. . . .	Sk.	36.0	38.8	40.3	47.2	49.4	51.8	58.5	0.0	2.9	58 49.43	− 1.14	. .	−68.94	17 57 39.35	. .
	48	Sun II, N. . . .	Sk.	58.8	1.3	2.8	9.6	11.8	14.3	20.9	22.5	25.3	1 11.92	− 1.14	. .	−68.94	18 0 1.84	. .
	49	δ Ursæ Minoris. .	Sk.	34.0	59.0	8.5	43.0	16.5	52.5	26.0	. .	. .	13 17.37	+ 9.93	. .	−68.94	18 12 18.36	− 0.64

3. Wire A used.
9, 49. Bisections at sets B and D.
43. Bisections at wires D_1 and D_2.
43, 47. Telescope micrometer reading decreased one revolution in reduction.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	54 24	10 20.8	3.2	25.2	28.5	32	090	. .	075	. .	095	79.7	305 31 24.7	. .	− 1 24.7	356 36 21.2	− 0.1
2	343 38	26.5	10.4	0.6	5.5	36	. .	730	. .	685	. .	79.7	16 18 42.0	. .	+ 17.7	67 25 20.9	+ 1.3
3	346 0	20.5	4.3	24.8	0.0	38	. .	565	. .	465	. .	79.7	13 54 30.7	. .	+ 15.0	65 1 6.9	− 1.3
4	337 34	24.4	7.1	27.0	2.2	37	. .	735	. .	665	. .	79.7	22 22 54.1	31.0	+ 24.9	73 29 40.2	+ 2.8
5	304 30	17.5	2.0	22.8	29.7	29	. .	. .	. .	855	845	79.7	55 24 49.3	. .	+ 1 27.5	106 32 38.0	+ 0.6
6	348 18	25.6	10.2	1.2	6.0	31	. .	155	. .	100	. .	79.7	11 37 16.6	. .	+ 12.4	62 43 50.2	− 0.1
7	348 10	11.7	25.1	17.8	26.7	32	. .	560	. .	530	. .	75.5	11 45 21.5	39.4	+ 12.4	72 51 55.1	− 1.5
8	327 52	14.5	29.0	21.3	27.7	34	. .	390	. .	340	. .	75.5	32 3 51.7	. .	+ 37.2	83 10 50.1	− 1.2
9	39 12	18.2	1.8	25.8	1.3	34	. .	694	. .	648	. .	75.5	320 44 0.1	. .	− 48.5	11 49 32.8	− 1.2
10	301 36	15.6	29.4	20.8	28.2	33	. .	738	. .	658	. .	75.5	58 19 41.7	. .	+ 1 36.1	109 27 39.0	− 3.4
11	317 42	13.6	27.8	21.1	28.3	39	. .	004	. .	980	. .	75.5	42 15 2.0	. .	+ 54.0	93 22 17.2	− 0.9
12	7 40	10.8	25.5	18.8	26.2	39	. .	. .	. .	868	938	75.5	352 17 14.6	. .	− 8.1	43 23 27.7	− 0.5
13	294 56	7.7	20.8	14.2	20.9	37	998	974	. .	. .	. .	75.5	65 0 39.2	. .	+ 2 7.4	116 9 7.8	− 2.8
14	22 50	12.0	26.9	19.7	24.7	36	. .	. .	. .	606	644	75.5	337 6 25.3	. .	− 25.2	28 12 21.3	0.0
15	310 44	14.8	0.7	22.4	29.3	31	. .	916	. .	900	. .	75.5	49 11 15.1	. .	+ 1 9.0	100 18 45.3	− 0.9
16	0 12	17.1	2.0	25.0	0.3	35	210	228	. .	. .	. .	75.5	359 44 7.8	43.8	− 0.3	50 50 28.7	+ 0.1
17	301 36	14.1	28.9	21.2	28.4	33	068	. .	. .	. .	974	75.5	58 19 30.8	. .	+ 1 36.6	109 27 28.6	. .
18	301 36	14.1	28.9	21.2	28.4	29	. .	060	. .	060	. .	75.5	58 18 30.3	. .	+ 1 36.6	109 26 28.1	. .
19	299 4	14.6	28.5	21.4	28.2	38	524	. .	. .	. .	524	75.5	60 52 55.1	. .	+ 1 47.0	112 1 3.3	. .
20	299 4	14.6	28.5	21.4	28.2	38	. .	858	. .	850	. .	75.5	60 53 0.3	. .	+ 1 47.0	122 1 8.5	. .
21	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
22	331 22	11.2	24.6	18.0	24.2	37	. .	482	. .	492	. .	75.5	28 34 35.9	. .	+ 31.7	79 41 28 8	− 0.7
23	329 36	17.1	0.4	25.2	1.5	37	. .	816	. .	816	. .	75.5	30 20 47.4	. .	+ 34.1	81 27 42.7	− 0.7
24	327 8	17.8	1.2	25.8	1.4	32	. .	172	. .	138	. .	75.5	32 47 21.2	52.2	+ 37.5	83 54 19.9	− 0.7
25	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
26	330 12	16.0	28.5	19.5	26.7	35	464	470	. .	. .	. .	77.3	29 44 9.6	. .	+ 34.4	80 51 5.2	. .
27	341 14	22.5	5.4	25.0	1.1	32	. .	. .	. .	142	120	77.3	18 41 25.1	. .	+ 20.3	69 48 6.6	+ 0.7
28	343 54	25.7	9.4	0.3	3.8	30	. .	. .	. .	256	188	77.3	16 0 59.7	. .	+ 17.3	67 7 38.2	+ 0.2
29	329 18	23.7	6.9	29.1	5.4	31	. .	956	. .	956	. .	77.3	30 37 24.7	. .	+ 35.7	81 44 21.6	− 0.7
30	27 52	23.3	5.2	26.7	1.5	32	. .	728	. .	710	. .	77.3	332 3 35.0	33.5	− 32.1	23 9 24.1	− 0.8
31	293 34	25.6	7.6	28.7	5.0	32	. .	290	. .	256	. .	77.3	66 21 29.8	. .	+ 2 17.6	117 30 8.6	− 4.2
32	323 46	23.3	6.9	27.2	3.9	35	. .	796	. .	800	. .	77.3	36 10 22.6	. .	+ 44.3	87 17 28.1	+ 0.2
33	316 10	25.4	7.7	29.7	6.0	36	. .	540	. .	526	. .	77.3	43 46 35.6	. .	+ 58.1	94 53 54.9	− 5.0
34	338 36	25.5	10.5	2.4	7.9	37	. .	722	324	958	. .	77.3	21 20 49.9	. .	+ 23.7	72 27 34.8	. .
35	344 46	23.3	6.0	26.2	2.8	35	. .	. .	. .	110	124	77.3	15 10 11.6	30.7	+ 16.5	66 16 49.3	− 0.5
36	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
37	335 42	23.9	6.7	27.5	2.6	36	. .	188	. .	100	. .	77.3	24 14 27.8	. .	+ 27.4	75 21 16.4	− 2.2
38	339 56	16.5	29.0	20.7	27.5	31	. .	060	. .	074	. .	77.3	19 59 3.3	35.5	+ 22.2	71 5 46.7	+ 1.0
39	33 18	17.3	0.1	23.0	26.5	33	. .	044	. .	940	. .	79.5	326 37 52.1	. .	− 39.7	17 43 33.6	+ 1.4
40	348 10	15.1	0.5	23.0	26.0	32	. .	370	. .	350	. .	79.5	11 45 25.7	35.2	+ 12.5	62 51 59.4	+ 2.2
41	327 52	11.5	26.5	14.0	22.8	34	596	570	. .	. .	. .	79.5	32 3 54.3	. .	+ 37.8	83 10 53.3	+ 1.6
42	325 54	12.8	29.0	20.0	24.3	33	840	850	. .	. .	. .	79.5	34 1 45.8	. .	+ 40.7	85 8 47.7	+ 2.3
43	39 12	8.5	23.5	16.1	19.1	34	. .	. .	. .	230	286	79.5	320 44 3.4	. .	− 49.2	11 49 35.4	+ 0.7
44	302 6	13.4	29.1	22.5	26.0	36	520	544	. .	. .	. .	79.5	57 50 27.9	. .	+ 1 35.3	108 58 24.4	. .
45	302 6	13.4	29.1	22.5	26.0	32	. .	. .	. .	620	610	79.5	57 49 28.7	. .	+ 1 35.2	108 57 25.1	. .
46	298 28	17.8	3.0	22.6	28.5	36	270	328	. .	. .	. .	79.5	61 28 27.1	. .	+ 1 49.5	112 36 37.8	. .
47	297 20	21.6	6.1	27.8	4.9	33	720	758	. .	. .	. .	79.5	62 35 37.2	39.1	+ 1 54.9	113 43 53.3	. .
48	297 52	16.7	0.6	22.2	28.8	30	. .	. .	. .	904	978	79.5	62 3 4.7	. .	+ 1 52.3	113 11 18.2	. .
49	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .

No.	Barom.	At. Ther.
	in.	°
4	29.92	34.0
7	30.09	35.5
16	30.09	40.5
24	30.10	48.0
30	30.11	37.5
35	30.11	35.5
38	30.13	35.5
40	30.10	35.4
47	30.10	37.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
17	− 26.7	− 30.3	. .	− 57.0
18	− 26.7	+ 30.3	− 0.1	+ 3.5
19	− 5.9	+ 2.6	0.0	− 3.3
20	− 5.9	− 2.6	. .	− 8.5
26	− 0.1	. .	. .	− 0.1
34	−21 44.2	− 16 27.3	. .	− 38 11.5
44	− 25.8	− 29.9	. .	− 55.7
45	− 25.8	+ 29.9	− 0.5	+ 3.6
46	− 4.0	. .	0.0	− 4.0
47	− 8.0	− 16 17.5	. .	− 16 25.5
48	− 7.9	+ 16 17.5	. .	+ 16 9.6

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Dec 21	1	α Lyræ	Sk.	34.0	37.3	39.2	46.9	49.6	52.2	0.1	2.0	5.3	33 49.62	− 0.35	−68.99	−68.95	18 32 40.32	+ 0.06
	2	γ Aquilæ. . . .	Sk.	14.5	17.1	18.7	25.0	27.0	29.0	35.3	36.9	39.4	41 26.99	− 0.74	−68.98	−68.96	19 40 17.29	+ 0.05
	3	α Aquilæ. . . .	Sk.	36.7	39.3	40.8	47.0	49.0	51.1	57.3	58.8	1.4	45 49.04	− 0.77	−68.94	−68.96	19 44 39.31	+ 0.02
	4	Polaris	Sk.	. .	. .	43.0	7.5	36.0	3.0	28.5	. .	. .	13 35.60	+29.32	. .	−69.03	1 12 55.89	+ 1.95
	5	θ^1 Ceti. . . .	Sk.	44.0	46.7	48.2	54.5	56.5	58.6	4.6	6.3	8.8	18 56.47	− 0.89	−68.97	−69.03	1 17 46.55	− 0.04
	6	Neptune	Sk.	54.5	57.0	58.5	2.6	4.8	6.7	8.9	. .	. .	48 6.81	− 0.68	. .	−69.03	1 46 57.13	. .
	7	β Arietis	Sk.	. .	. .	. .	. .	. .	. .	2.5	4.0	6.7	48 53.70	− 0.54	−68.94	−69.03	1 47 44.13	− 0.07
	8	α Arietis	Sk.	4.0	6.9	8.5	15.0	17.4	19.5	26.1	27.8	30.7	1 17.32	− 0.50	−69.01	−69.03	2 0 7.79	− 0.01
	9	Pallas	Sk.	9.8	11.2	15.8	18.5	20.7	22.7	25.3	29.9	31.7	33 20.62	− 1.12	. .	−69.04	2 32 10.46	. .
	10	Juno	Sk.	18.2	20.9	22.3	28.5	30.6	32.8	38.8	40.4	42.9	47 30.60	− 0.84	. .	−69.04	2 46 20.72	. .
	11	γ^2 Ursæ Minoris, S. P.	Sk.	. .	. .	19.0	12.6	6.0	59.6	52.9	. .	. .	22 6.02	− 3.06	. .	−69.04	15 20 53.92	− 0.21
	12	ζ Ursæ Minoris, S. P.	Sk.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	13	ϵ Tauri	Sk.	16.6	19.0	20.7	27.2	29.4	31.7	38.0	39.6	42.5	22 29.41	− 0.55	−69.06	−69.06	4 21 19.80	− 0.01
	14	α Tauri	Sk.	42.6	45.3	46.8	53.0	55.2	57.4	3.7	5.3	8.0	29 55.26	− 0.59	−69.02	−69.06	4 28 45.61	− 0.06
	15	ι Aurigæ	Sk.	47.0	50.0	51.8	59.3	1.6	4.0	11.4	13.3	16.1	50 1.61	− 0.36	−69.16	−69.07	4 48 52.18	+ 0.05
	16	Moon I, N. . .	Sk.	16.5	19.5	21.3	28.3	30.7	33.0	40.0	41.9	44.8	57 30.67	− 0.44	. .	−69.07	4 56 21.16	+77.03
22	17	Neptune	E.	52.6	55.3	56.7	3.1	5.2	7.2	13.5	15.0	17.6	48 5.13	− 0.67	. .	−69.58	1 47 54.88	. .
	18	α Arietis	E.	4.7	7.5	9.0	15.6	17.8	20.0	26.8	28.5	31.1	1 17.89	− 0.51	−69.57	−69.58	2 0 7.80	0.00
	19	ξ^1 Ceti	E.	20.6	23.1	24.7	31.0	33.0	35.0	41.2	42.8	45.4	7 32.98	− 0.68	−69.61	−69.59	2 6 22.71	+ 0.06
	20	5 Ursæ Minoris, S. P.	E.	51.5	40.5	34.0	8.0	0.0	51.0	25.3	19.0	8.3	28 59.73	− 3.37	. .	−69.59	14 27 46.77	− 0.39
	21	Pallas	E.	4.8	7.7	9.5	16.2	18.6	20.9	27.7	29.4	32.4	33 18.58	− 1.08	. .	−69.59	2 32 7.91	. .
	22	γ Ceti	E.	47.9	50.5	52.0	58.2	0.3	2.3	8.3	9.9	12.5	38 0.21	− 0.74	−69.63	−69.59	2 36 49.88	+ 0.04
	23	Anonymous . .	E.	. .	. .	17.8	19.8	21.9	23.9	26.0	. .	. .	48 21.88	− 0.72	. .	−69.60	2 47 11.56	. .
	24	α Ceti	E.	43.2	45.9	47.4	53.6	55.6	57.6	3.7	5.3	7.7	56 55.56	− 0.73	−69.61	−69.60	2 55 45.23	+ 0.03
	25	ζ Arietis	E.	40.4	43.3	45.0	51.5	53.6	55.8	2.4	4.0	6.8	8 53.64	− 0.54	−69.62	−69.60	3 7 43.50	− 0.02
	26	α Persei	E.	15.7	19.8	22.0	31.6	34.6	37.7	47.0	49.5	53.6	16 34.61	− 0.05	. .	−69.60	3 15 24.96	+ 0.10
	27	γ^2 Ursæ Minoris, S. P.	E.	46.6	37.5	32.7	13.0	6.4	59.0	39.5	34.5	26.3	22 6.17	− 2.76	. .	−69.61	15 20 53.80	− 0.40
	28	Vesta	E.	29.3	32.0	33.6	39.9	42.0	44.2	50.5	52.0	54.8	0 42.03	− 0.61	. .	−69.62	3 59 31.80	. .
	29	Groom. 2320, S. P.	E.	41.5	34.5	30.6	14.0	8.5	3.0	46.3	42.4	35.8	7 8.51	− 2.37	. .	−69.62	16 5 56.52	− 0.03
	30	γ Tauri	E.	38.8	41.6	43.2	49.6	51.8	53.9	0.3	1.8	4.6	13 51.73	− 0.60	−69.60	−69.62	4 12 41.51	− 0.01
	31	ϵ Tauri	E.	17.0	19.8	21.5	27.8	29.9	32.0	38.6	40.2	43.0	22 29.98	− 0.56	−69.62	−69.62	4 21 19.80	− 0.01
	32	α Tauri	E.	43.2	45.8	47.5	53.8	55.8	57.9	4.3	6.0	8.8	29 55.90	− 0.59	−69.66	−69.62	4 28 45.69	+ 0.01
	33	Astræa	E.	11.8	14.8	16.1	22.6	24.6	26.7	32.8	34.6	37.2	35 24.58	− 0.62	. .	−69.63	4 34 14.33	. .
	34	9 Camelopardalis .	E.	18.4	25.3	29.0	44.0	49.0	54.5	9.0	13.0	19.2	42 49.04	+ 0.64	. .	−69.63	4 41 40.05	+ 0.20
	35	ι Aurigæ. . . .	E.	47.6	50.8	52.6	59.7	2.2	4.6	11.0	13.8	16.8	50 2.22	− 0.37	−69.76	−69.63	4 48 52.22	+ 0.09
	36	δ Orionis. . . .	E.	36.2	38.9	40.4	46.5	48.6	50.6	56.7	58.2	0.9	26 48.56	− 0.77	−69.65	−69.64	5 25 38.15	− 0.02
	37	α Leporis . . .	E.	14.5	16.0	20.3	22.4	24.6	26.8	28.9	33.1	34.8	28 24.60	− 0.96	−69.54	−69.64	5 27 14.00	− 0.14
	38	ϵ Orionis . . .	E.	51.3	53.8	55.4	1.5	3.5	5.6	11.6	13.0	15.7	31 3.49	− 0.78	−69.57	−69.64	5 29 53.07	− 0.08
	39	α Columbæ . . .	E.	5.0	7.7	9.6	17.0	19.6	22.1	29.5	31.3	34.5	36 19.59	− 1.18	−69.67	−69.64	5 35 8.77	− 0.01
	40	ω Draconis, S. P. .	E.	. .	. .	0.8	55.0	49.5	43.5	38.0	. .	. .	38 49.36	− 2.42	. .	−69.64	17 37 37.30	− 0.20
	41	ψ^1 Draconis, S. P. .	E.	. .	. .	31.3	24.5	18.0	11.4	4.6	. .	. .	45 17.96	− 2.76	. .	−69.64	17 44 5.56	− 0.16
	42	ψ^2 Draconis, S. P. .	E.	. .	. .	33.0	26.5	19.8	13.0	6.4	. .	. .	45 19.74	− 2.76	. .	−69.64	17 44 7.31	+ 1.62
	43	α Orionis. . . .	E.	23.0	25.6	27.2	33.3	35.4	37.5	43.6	45.2	47.8	49 35.40	− 0.69	−69.57	−69.65	5 48 25.06	− 0.11
	44	Moon I, S. . .	E.	49.8	52.9	54.6	1.9	4.4	6.7	13.8	15.5	18.3	6 4.21	− 0.44	. .	−69.65	6 4 54.12	+77.56
	45	Moon II, . . .	E.	25.0	28.0	29.9	36.9	39.3	41.7	48.8	50.8	53.6	8 39.33	− 0.44	. .	−69.65	6 7 29.24	−77.56
	46	δ Ursæ Minoris, S. P.	E.	. .	. .	49.0	14.5	40.0	5.0	30.0	. .	. .	13 39.70	−11.43	. .	−69.65	18 12 18.62	− 0.19
	47	α Scorpii	F.	39.7	42.8	44.5	51.3	53.5	55.7	2.5	4.2	7.0	22 53.47	− 0.97	−69.79	−69.82	16 21 42.68	− 0.04
	48	ζ Ophiuchi . . .	F.	12.9	15.6	17.2	23.3	25.4	27.5	33.8	35.3	37.8	31 25.42	− 0.79	−69.82	−69.82	16 30 14.81	0.00
	49	η Herculis . . .	F.	29.1	32.5	34.4	. .	. .	. .	55.3	57.4	0.7	39 44.90	− 0.20	−69.82	−69.83	16 38 34.87	0.00

11, 16, 44. Bisections at sets B and D.
12. Bisections at wires D_1, D_3, and VI.
16. Wire A used.
23. Observed for Juno.
40, 41, 42. Bisections at set C.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	359 42	10 9.3	25.9	18.8	18.1	33	680	690	. .	. .	. .	79.5	0 13 37.2	. .	+ 0.2	51 19 58.6	− 1.1
2	331 22	10.4	28.0	18.9	22.1	37	398	438	. .	. .	. .	79.5	28 34 38.9	. .	+ 32.5	79 41 32.6	+ 2.8
3	329 36	10.8	27.0	18.6	23.9	38	158	090	. .	. .	. .	79.5	30 20 50.3	41.5	+ 34.9	81 27 46.4	+ 2.8
4	49 40	5.8	19.1	10.0	12.7	35	328	. .	350	. .	290	76.9	310 15 56.7	. .	− 1 12.2	1 21 5.7	− 1.6
5	312 14	14.6	27.4	18.9	25.1	36	. .	150	. .	088	. .	76.9	47 42 18.2	28.8	+ 1 7.2	98 49 46.6	+ 0.3
6	330 12	11.5	25.5	15.0	23.0	36	872	903	. .	. .	. .	76.9	29 44 27.0	. .	+ 34.9	80 51 23.1	. .
7	341 14	16.0	29.0	20.0	24.5	32	. .	. .	. .	488	532	76.9	18 41 24.0	. .	+ 20.7	69 48 5.9	0.0
8	343 54	16.0	0.0	20.4	25.2	30	848	888	. .	. .	. .	76.9	16 0 59.1	. .	+ 17.6	67 7 37.9	− 0.1
9	293 48	20.8	2.8	23.3	29.0	36	. .	. .	. .	908	. .	76.9	66 8 35.4	. .	+ 2 17.4	117 17 14.0	− 4.3
10	316 22	11.7	24.3	18.4	22.0	35	. .	076	. .	998	. .	76.9	43 33 59.2	. .	+ 58.1	94 41 18.5	− 4.9
11	68 44	12.6	22.8	13.1	18.5	37	958	. .	. .	. .	870	76.9	291 12 40.7	29.9	− 2 36.2	342 16 25.7	− 1.9
12	62 50	6.3	17.4	9.6	14.9	35	. .	. .	715	680	770	76.9	297 6 2.3	. .	− 1 58.9	348 10 24.6	− 0.5
13	339 56	17.8	1.5	20.2	26.0	30	930	962	. .	. .	. .	76.9	19 59 1.6	. .	+ 22.2	71 5 45.0	− 0.8
14	337 18	20.9	3.7	22.8	29.9	33	368	380	. .	. .	. .	76.9	22 37 41.3	. .	+ 25.5	73 44 28.0	− 0.8
15	354 0	7.9	22.5	11.0	16.5	32	932	945	. .	. .	. .	76.9	5 55 22.5	. .	+ 6.3	57 1 50.0	− 2.0
16	347 44	18.2	0.9	21.0	26.7	34	402	. .	388	. .	145	76.9	12 9 20.2	28.8	+ 13.2	63 15 54.6	. .
17	330 12	23.5	8.5	29.0	7.4	36	. .	750	. .	705	. .	78.6	29 44 39.9	37.0	+ 34.0	80 51 35.1	. .
18	343 54	21.0	7.4	28.0	3.0	30	. .	390	. .	335	. .	78.6	16 1 0.3	. .	+ 17.1	67 7 38.6	+ 0.6
19	329 18	21.5	6.5	0.0	2.7	32	. .	105	. .	075	. .	78.6	30 37 27.0	. .	+ 35.2	81 44 23.4	+ 1.0
20	64 46	22.6	7.5	28.5	2.5	36	. .	320	. .	250	. .	78.6	295 10 29.9	. .	− 2 6.1	346 14 45.0	+ 1.0
21	293 54	20.3	4.2	26.6	1.0	34	. .	. .	. .	385	395	78.6	66 1 59.9	. .	+ 2 13.2	117 10 34.3	− 4.3
22	323 46	22.0	7.5	27.5	3.6	35	. .	845	. .	805	. .	78.6	36 10 24.1	. .	+ 43.5	87 17 28.8	+ 0.7
23	325 38	25.3	11.6	2.0	5.7	30	200	205	. .	. .	. .	78.6	34 17 1.2	. .	+ 40.6	85 24 3.0	. .
24	324 38	23.8	6.0	29.5	3.5	30	. .	105	. .	065	. .	78.6	35 16 56.8	. .	+ 42.1	86 24 0.1	− 3.0
25	341 38	11 1.0	15.1	5.4	8.0	35	. .	230	. .	140	. .	78.6	18 18 21.7	. .	+ 19.7	69 25 2.6	− 0.8
26	10 26	10 27.0	12.5	5.0	5.5	28	. .	935	. .	985	. .	78.6	349 28 44.2	. .	− 11.1	40 34 54.3	− 0.5
27	68 44	22.8	6.2	28.0	29.7	36	. .	880	. .	800	. .	78.6	291 12 37.6	. .	− 2 32.5	342 16 26.3	− 0.8
28	335 46	25.9	10.1	3.2	6.0	35	. .	795	. .	740	. .	78.6	24 10 27.0	. .	+ 26.8	75 17 15.0	− 2.2
29	72 50	22.0	6.2	26.2	0.8	30	. .	170	. .	105	. .	78.6	287 4 54.9	. .	− 3 12.0	338 8 4.1	− 3.4
30	336 22	18.0	3.2	23.2	0.5	33	. .	100	. .	080	. .	78.6	23 33 38.4	. .	+ 26.0	74 40 25.6	+ 0.7
31	339 56	22.0	8.0	27.3	3.7	30	. .	575	. .	535	. .	78.6	19 59 3.6	. .	+ 21.7	71 5 46.5	+ 0.7
32	337 18	26.5	12.7	2.3	7.2	32	. .	950	. .	910	. .	78.6	22 37 44.4	. .	+ 24.9	73 44 30.5	+ 1.7
33	334 50	17.0	3.0	24.7	0.0	33	. .	880	. .	905	. .	78.6	25 5 50.6	. .	+ 28.0	76 12 39.8	− 2.8
34	27 10	22.5	7.8	29.0	2.1	35	. .	515	. .	525	. .	78.6	332 46 20.4	. .	− 30.7	23 52 10.9	+ 1.1
35	354 0	21.4	6.7	28.0	0.8	31	. .	900	. .	940	. .	78.6	5 55 23.6	. .	+ 6.2	57 1 51.0	− 0.9
36	320 40	18.0	2.2	21.5	29.0	35	. .	810	. .	780	. .	78.6	39 16 18.7	. .	+ 48.9	90 23 28.8	− 0.7
37	303 10	28.0	11.7	0.9	6.7	37	. .	090	. .	140	. .	78.6	56 46 47.9	. .	+ 1 31.1	107 54 40.2	− 0.8
38	319 46	21.5	6.2	25.9	2.4	33	. .	135	. .	075	. .	78.6	40 9 41.3	. .	+ 50.4	91 16 52.9	− 0.5
39	286 56	22.7	7.0	26.8	1.2	29	. .	. .	. .	785	720	78.6	72 58 50.4	. .	+ 3 13.1	124 8 24.7	+ 0.4
40	72 10	25.2	9.3	28.4	2.0	32	090	. .	. .	. .	125	78.6	287 45 26.7	. .	− 3 4.8	338 48 43.1	− 1.0
41	68 48	25.0	9.7	29.7	4.2	36	515	. .	. .	. .	470	78.6	291 8 36.3	. .	− 2 33.6	342 12 23.9	− 1.5
42	68 48	25.0	9.7	29.7	4.2	38	. .	420	. .	410	. .	78.6	291 9 5.8	. .	− 2 33.6	342 12 53.4	+28.0
43	328 26	22.7	7.8	29.7	3.6	34	. .	155	. .	145	. .	78.6	31 29 59.3	. .	+ 36.6	82 36 57.1	− 0.2
44	348 40	20.0	4.4	25.3	0.7	31	880	. .	935	. .	945	78.6	11 15 21.8	. .	+ 11.9	62 21 54.9	. .
45	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
46	54 24	18.5	3.8	26.3	29.3	32	005	. .	975	. .	005	78.6	305 31 22.2	34.5	− 1 23.7	356 36 19.7	− 0.4
47	294 56	6.0	20.5	12.1	25.7	37	. .	918	. .	930	. .	79.2	65 0 42.6	. .	+ 2 7.0	116 9 10.8	+ 0.1
48	310 44	14.4	28.9	21.1	27.6	32	. .	008	. .	960	. .	79.2	49 11 18.7	41.6	+ 1 8.8	100 18 48.7	+ 2.0
49	0 12	16.6	2.0	24.0	28.2	35	. .	372	. .	394	. .	79.2	359 44 13.3	. .	− 0.3	50 50 34.2	+ 4.2

No.	Barom.	At. Ther.
	in.	°
3	30.15	46.0
5	30.15	33.3
11	30.13	32.6
17	29.82	41.0
46	29.85	37.0
48	30.08	40.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	′ ″
6	− 0.1	. . .	. .	− 0.1
16	−12 28.4	+ 16 26.2	. .	+ 3 57.8
17	− 0.1	. . .	. .	− 0.1
44	−16 19.2	− 11 28.0	. .	− 27 47.2

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Dec. 22	1	κ Ophiuchi	F.	41.4	44.0	45.6	48.5	50.8	. .	. .	. .	. .	52 53.81	− 0.58	−69.84	−69.83	16 51 43.40	+ 0.05
	2	d Herculis	F.	. .	. .	3.0	5.4	7.8	10.7	12.9	. .	. .	58 7.96	− 0.29	. .	−69.83	16 56 57.84	+ 0.32
	3	a^1 Herculis	F.	52.9	55.5	57.0	3.5	5.6	7.7	14.0	15.6	18.2	10 5.56	− 0.53	−69.88	−69.83	17 8 55.20	+ 0.07
	4	Mercury II, C.	F.	. .	. .	46.0	48.3	50.6	52.7	55.0	. .	. .	12 50.52	− 0.93	. .	−69.84	17 11 39.75	− 0.18
23	5	Sun I, N.	F.	29.9	33.0	34.5	40.9	43.1	45.4	52.3	53.7	56.8	7 43.29	− 0.93	. .	−69.85	18 6 32.51	. .
	6	Sun II, S.	F.	52.7	55.3	57.0	3.9	6.0	8.5	15.0	16.5	19.3	10 6.02	− 0.93	. .	−69.85	18 8 55.24	. .
	7	β Lyræ	F.	21.3	24.5	26.3	33.5	36.0	38.6	45.7	47.5	50.7	40 36.01	− 0.30	−69.81	−69.86	18 45 25.85	− 0.02
	8	δ Aquilæ	F.	8.3	11.0	12.6	18.6	20.7	23.0	28.8	30.3	32.8	20 20.68	− 0.65	−70.06	−69.86	19 19 10.17	+ 0.25
	9	a Aquilæ	F.	37.5	40.0	. .	. .	49.8	51.9	. .	59.6	2.1	45 49.81	− 0.59	−69.88	−69.86	19 44 39.36	+ 0.06
	10	β Aquilæ	F.	6.9	9.5	11.0	17.1	19.1	21.3	27.5	29.0	31.7	50 19.23	− 0.62	−69.94	−69.86	19 49 8.75	+ 0.11
	11	Ceres	F.	0.0	1.9	6.3	8.6	11.0	13.3	15.6	20.3	22.0	39 11.00	− 0.33	. .	−70.02	6 38 0.65	. .
	12	δ Canis Majoris	F.	16.8	19.7	21.5	28.2	30.5	32.8	39.5	41.2	44.1	4 30.48	− 0.93	−69.97	−70.02	7 3 19.53	− 0.10
	13	Moon II	F.	8.4	11.4	13.2	20.3	22.7	25.0	32.2	33.8	36.9	16 22.66	− 0.32	. .	−70.03	7 15 12.31	−76.07
	14	a^2 Geminorum	F.	34.2	37.2	39.0	46.2	48.6	51.0	58.2	0.0	3.0	27 48.60	− 0.25	−70.02	−70.03	7 26 38.32	+ 0.25
	15	a Canis Minoris	F.	44.5	47.0	48.5	54.7	56.7	59.0	5.0	6.4	9.0	33 56.76	− 0.58	−69.96	−70.03	7 32 46.15	− 0.23
	16	β Geminorum	F.	37.3	40.2	41.8	48.7	51.1	53.5	0.5	2.0	5.2	38 51.14	− 0.30	−69.97	−70.03	7 37 40.81	− 0.09
	17	λ Ursæ Minoris, S. P.	F.	. .	. .	. .	. .	. .	3.0	11.0	. .	. .	49 51.35	−34.08	. .	−70.04	19 48 7.23	− 0.61
24	18	ε^1 Hydræ	S.	8.3	10.9	12.3	. .	. .	. .	28.7	30.4	33.0	41 20.60	− 0.49	. .	−70.22	8 40 9.89	− 0.16
	19	ε^2 Hydræ	S.	. .	. .	16.7	18.6	20.7	22.9	24.8	. .	. .	41 20.74	− 0.49	−70.24	−70.22	8 40 10.03	− 0.02
	20	ι Ursæ Majoris	S.	. .	. .	. .	. .	53.0	56.1	2.2	4.5	8.5	51 49.91	+ 0.17	. .	−70.22	8 50 39.86	+ 0.05
	21	σ^3 Ursæ Majoris	S.	. .	. .	23.2	28.6	34.0	39.6	45.0	. .	. .	0 34.08	+ 0.98	. .	−70.22	8 59 24.84	0.00
	22	Weisse (2), 137	S.	47.9	51.4	53.4	1.9	4.7	7.6	16.0	18.0	21.7	10 4.73	+ 0.03	. .	−70.23	9 8 54.53	− 5.07
	23	a Hydræ	S.	25.7	28.1	29.8	36.0	38.1	40.2	46.3	47.7	50.4	22 38.03	− 0.65	−70.26	−70.23	9 21 27.15	0.00
	24	d Ursæ Majoris	S.	. .	. .	. .	. .	. .	. .	59.7	4.5	11.8	24 35.39	+ 1.22	. .	−70.23	9 23 26.38	− 0.23
	25	ε Leonis (R.)	S.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
	26	79 Draconis, S. P.	S.	. .	. .	41.3	34.1	27.0	20.3	12.7	. .	. .	52 27.08	− 2.73	. .	−70.23	21 51 14.12	− 0.24
	27	a Leonis	S.	. .	. .	49.7	51.7	53.8	55.9	57.9	. .	. .	2 53.80	− 0.43	−70.17	−70.23	10 1 43.14	− 0.10
	28	Groombridge 1620	S.	. .	. .	37.5	1.0	23.9	47.0	9.0	. .	. .	12 23.68	+ 6.62	. .	−70.23	10 11 20.07	−21.34
	29	B. A. C. 7851, S. P.	S.	. .	. .	53.6	27.8	1.5	36.0	9.9	. .	. .	24 1.76	− 8.78	. .	−70.23	22 22 42.77	+17.25
	30	β Leonis	S.	38.9	41.5	43.2	49.3	51.4	53.6	59.8	1.4	4.0	43 51.46	− 0.40	−70.24	−70.24	11 42 40.82	− 0.02
	31	4 Draconis	S.	. .	. .	8.9	19.0	29.2	39.3	49.2	. .	. .	7 29.12	+ 2.52	. .	−70.25	12 6 21.39	− 0.30
	32	η Virginis	S.	28.8	32.9	36.9	39.0	41.0	43.0	45.0	49.2	53.4	14 41.02	− 0.56	−70.22	−70.25	12 13 30.21	− 0.03
	33	β Corvi	S.	46.6	49.0	50.8	57.4	59.7	1.9	8.6	10.2	13.0	28 59.69	− 0.81	−70.26	−70.25	12 27 48.63	− 0.03
	34	21 Cassiopeæ, S. P.	S.	. .	. .	52.2	45.0	37.0	29.4	21.7	. .	. .	38 37.06	− 2.91	. .	−70.25	0 37 23.99	+ 0.15
	35	12^1 Canum Venat.	S.	. .	. .	. .	. .	. .	. .	29.8	31.8	35.0	51 19.27	− 0.05	. .	. .		. .
	36	12^2 Canum Venat.	S.	. .	. .	. .	. .	. .	. .	31.3	33.2	36.5	51 20.74	− 0.06	−70.27	−70.25	12 50 10.43	+ 0.02
	37	Polaris, S. P.	S.	. .	. .	21.0	55.0	29.5	1.0	. .	. .	. .	14 28.50	−27.92	. .	−70.26	1 12 50.32	− 0.75
25	38	Moon II, S.	Sk.	33.6	36.5	38.0	44.7	46.9	49.2	55.8	57.6	0.2	18 46.94	− 0.30	. .	−70.20	9 17 36.44	−69.69
	39	a Hydræ	Sk.	25.7	28.3	29.8	35.9	38.0	40.0	46.2	47.9	50.4	22 38.02	− 0.62	−70.25	−70.20	9 21 27.20	+ 0.02
	40	γ^1 Leonis	Sk.	2.6	5.0	7.0	13.6	15.7	17.8	24.5	26.0	28.8	14 15.67	− 0.30	−70.23	−70.21	10 13 5.10	0.00
	41	δ Leonis	Sk.	. .	. .	33.7	35.8	38.0	40.2	42.5	. .	. .	8 38.04	− 0.29	−70.07	−70.21	11 7 27.54	− 0.20
	42	δ Crateris	Sk.	. .	. .	14.2	16.4	18.3	20.5	24.7	26.3	28.9	14 16.29	− 0.69	−70.23	−70.21	11 13 5.39	0.00
	43	β Leonis	Sk.	38.7	41.3	43.0	49.4	51.4	53.5	0.0	1.6	4.3	43 51.47	− 0.36	−70.25	−70.21	11 42 40.90	+ 0.02
	44	12 Canum Venat.	Sk.	8.1	10.2	15.5	18.1	20.7	23.3	25.9	31.2	33.1	51 20.68	− 0.02	−70.21	−70.22	12 50 10.44	− 0.01
	45	Polaris, S. P.	Sk.	. .	. .	25.0	. .	. .	56.0	33.0	. .	. .	14 27.99	−28.37	. .	−70.22	1 12 49.40	− 0.74
29	46	δ Ophiuchi	E.	44.8	47.3	48.9	55.0	57.0	59.2	5.2	6.9	9.4	8 57.08	0.00	−70.82	−70.80	16 7 46.28	+ 0.01
	47	a Scorpii	E.	40.0	43.0	44.8	51.4	53.6	55.9	2.9	4.6	7.3	22 53.72	+ 0.07	−70.89	−70.80	16 21 42.90	+ 0.08

16. Wire B used.
21, 26, 31, 38. Bisections at sets B and D.
28, 29. Bisections at set C.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	330 38	10 20.0	4.4	26.5	0.1	38	. .	320	. .	170	. .	79.2	29 18 59.4	. .	+ 33.3	80 25 53.9	+ 2.9
2	354 48	24.3	9.8	0.5	5.5	36	. .	. .	. .	686	896	79.2	5 8 42.6	. .	+ 5.3	56 15 9.1	+ 2.0
3	335 34	16.5	0.5	22.7	0.7	31	920	920	. .	. .	. .	79.2	24 21 20.0	. .	+ 26.8	75 28 8.0	+ 4.3
4	297 56	6.6	21.5	12.0	20.4	34	. .	730	. .	724	. .	79.2	61 59 52.7	44.2	+ 1 50.9	113 8 4.8	. .
5	297 54	9 25.5	12.7	2.7	7.7	37	412	412	. .	. .	. .	79.2	62 2 22.8	. .	+ 1 50.5	113 10 34.5	. .
6	297 22	23.5	10.0	0.7	4.1	39	. .	. .	. .	642	700	79.2	62 34 55.8	. .	+ 1 53.1	113 43 10.1	. .
7	354 16	10 19.9	2.0	24.0	0.7	36	. .	. .	. .	628	640	79.2	5 40 34.3	48.3	+ 5.8	56 47 1.3	+ 2.5
8	323 54	15.2	29.0	18.9	28.7	31	. .	040	. .	976	. .	79.2	36 1 3.8	. .	+ 42.6	87 8 7.6	+ 2.2
9	329 36	21.4	8.0	27.0	4.8	37	650	598	. .	. .	. .	79.2	30 20 52.1	. .	+ 34.3	81 27 47.6	+ 3.7
10	327 8	16.5	1.7	22.6	28.8	32	. .	300	. .	240	. .	79.2	32 47 25.1	48.9	+ 37.7	83 54 24.0	+ 2.8
11	347 46	23.4	5.1	24.6	2.5	37	. .	. .	. .	684	672	76.1	12 10 49.0	. .	+ 12.9	63 17 23.1	− 1.1
12	294 54	14.2	24.2	15.3	24.6	39	. .	590	. .	598	. .	76.1	65 3 8.6	34.0	+ 2 8.3	116 11 38.1	+ 4.1
13	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
14	353 12	28.0	10.4	0.4	7.2	33	. .	440	. .	420	. .	76.1	6 43 49.0	. .	+ 7.1	57 50 17.3	− 0.3
15	326 36	20.5	3.5	24.6	1.1	35	. .	350	. .	340	. .	76.1	33 20 11.5	. .	+ 39.5	84 27 12.2	− 3.5
16	349 26	11 1.6	16.0	4.7	12.4	38	. .	630	. .	616	. .	76.1	10 33 46.5	. .	+ 11.2	61 40 18.9	− 1.7
17	52 6	10 20.9	4.5	25.5	0.8	37	. .	. .	. .	610	664	76.1	307 50 46.8	33.0	− 1 17.2	358 55 50.8	− 0.5
18	327 56	22.6	7.9	27.0	4.1	35	. .	834	. .	818	. .	77.5	32 0 23.3	33.5	+ 38.0	83 7 22.5	+ 3.3
19	327 56	22.6	7.9	27.0	4.1	35	702	. .	. .	. .	594	77.5	32 0 20.7	. .	+ 38.0	83 7 19.9	+ 0.7
20	9 34	11 2.8	17.6	7.3	3.4	33	. .	. .	. .	631	611	77.5	349 21 59.9	. .	− 11.4	40 28 9.7	− 2.2
21	28 40	10 6.2	20.8	10.2	17.0	34	. .	900	. .	910	. .	77.5	331 15 52.4	. .	− 33.4	22 21 40.2	− 3.5
22	4 32	18.2	3.2	24.5	29.5	38	. .	577	. .	429	. .	77.5	355 25 0.5	. .	− 4.9	46 31 16.8	−17.4
23	312 56	19.9	4.0	26.5	2.8	32	. .	391	. .	381	. .	77.5	46 59 28.5	. .	+ 1 5.2	98 6 54.9	+ 0.3
24	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
25	194 28	13.3	29.0	19.0	23.3	33	172	157	148	170	110	77.5	165 27 32.9	33.1	− 15.8	65 39 4.1	+ 0.1
26	67 52	19.5	2.9	23.5	29.9	30	586	550	. .	. .	. .	77.5	292 2 58.5	. .	− 2 29.6	343 6 50.1	+ 1.7
27	333 38	11.6	26.7	16.8	24.1	36	. .	796	. .	754	. .	77.5	26 18 27.3	. .	+ 30.2	77 25 18.7	+ 0.3
28	45 54	21.3	6.5	25.7	0.9	33	562	. .	. .	. .	516	77.5	314 1 46.6	. .	− 1 3.1	5 7 4.7	−29.0
29	55 32	19.1	2.8	24.0	28.5	34	622	. .	. .	. .	600	77.5	304 24 0.3	31.6	− 1 29.1	355 28 52.4	−30.5
30	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
31	39 20	18.5	0.8	21.5	27.1	34	. .	937	. .	083	. .	77.5	320 36 5.0	. .	− 50.4	11 41 35.8	− 3.9
32	321 6	18.4	3.5	23.3	1.1	38	. .	810	. .	840	. .	77.5	38 51 5.4	30.0	+ 49.4	89 58 16.0	− 0.5
33	298 22	17.1	1.4	21.2	29.1	34	. .	279	. .	185	. .	77.5	61 33 53.0	29.9	+ 1 52.9	112 42 7.1	− 0.7
34	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
35	0 2	18.7	3.3	23.3	28.9	36	282	. .	. .	. .	210	77.5	359 54 26.0	. .	− 0.1	51 0 47.1	+13.5
36	0 2	18.7	3.3	23.3	28.9	35	. .	418	. .	420	. .	77.5	359 54 13.0	. .	− 0.1	51 0 34.1	+ 0.5
37	52 22	21.3	5.5	26.0	0.7	33	908	849	893	. .	. .	77.5	307 33 51.4	29.1	− 1 19.9	358 38 52.7	− 0.7
38	341 16	18.8	0.9	20.3	27.8	34	910	. .	052	. .	164	76.7	18 40 4.6	. .	+ 20.8	69 46 46.6	. .
39	312 56	16.9	28.9	20.9	28.4	32	695	640	. .	. .	. .	76.7	46 59 27.1	26.9	+ 1 6.0	98 6 54.3	− 0.5
40	341 32	14.5	26.3	15.3	23.9	38	. .	630	. .	610	. .	76.7	18 24 55.0	. .	+ 20.5	69 31 36.7	+ 0.1
41	342 16	18.2	1.6	22.6	28.0	37	. .	. .	. .	805	848	76.7	17 40 48.4	. .	+ 19.5	68 47 29.1	− 3.5
42	306 58	16.0	28.9	19.5	26.1	35	. .	855	. .	. .	780	76.7	52 58 14.5	. .	+ 1 21.1	104 5 56.8	− 2.4
43	336 20	4.7	18.5	8.4	13.9	39	304	376	. .	. .	. .	76.7	23 36 57.4	. .	+ 26.7	74 43 45.3	− 1.4
44	0 2	7.8	23.0	13.1	16.9	35	972	022	. .	. .	. .	76.7	359 54 10.0	. .	− 0.1	51 0 31.1	− 2.7
45	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
46	317 42	18.8	5.0	27.8	1.6	38	. .	620	. .	650	. .	75.7	42 15 2.4	28.5	+ 56.1	93 22 19.7	− 0.2
47	294 56	24.3	11.7	4.0	7.3	36	. .	650	. .	645	. .	75.7	65 0 37.8	. .	+ 2 11.7	116 9 10.7	− 0.3

No.	Barom.	At. Ther.
	in.	°
4	30.11	42.5
7	30.08	45.9
10	30.10	50.5
12	29.88	37.5
17	29.87	36.5
20	30.27	34.0
37	30.32	31.0
39	30.23	30.2
45	30.20	33.2
48	30.39	29.0

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ ″	″
4	− 5.7	. .	0.0	− 5.7
5	− 8.0	+ 16 17.8	. .	+ 16 9.8
6	− 8.0	− 16 17.8	. .	− 16 25.8
38	−18 11.4	− 15 41.0	. .	− 33 52.4

DATE.	Number.	OBJECT.	Observer.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent Right Ascension.	Miscellan'us Corrections.
1874.													m. s.	s.	s.	s.	h. m. s.	s.
Dec. 29	1	ζ Ophiuchi	E.	13.3	15.9	17.5	23.8	25.9	27.9	34.1	35.7	38.3	31 25.82	+ 0.02	−70.86	−70.80	16 30 15.04	+ 0.06
	2	η Herculis	E.	30.0	33.3	35.4	43.0	45.8	48.4	56.4	58.5	1.7	39 45.83	+ 0.13	−70.68	−70.80	16 38 34.90	− 0.11
	3	ε Ursæ Minoris	E.	24.5	43.0	53.0	40.0	55.0	10.0	57.0	6.0	25.5	59 54.89	− 0.91	. .	−70.80	16 58 43.18	− 0.28
	4	α^1 Herculis	E.	53.4	56.0	57.7	4.0	6.1	8.3	24.5	26.0	28.7	10 6.08	− 0.05	−70.75	−70.80	17 8 55.23	− 0.03
	5	α Ophiuchi	E.	4.6	7.1	8.8	15.0	17.2	19.3	25.5	27.0	29.6	30 17.12	− 0.05	−70.79	−70.80	17 29 6.27	+ 0.02
	6	μ Herculis	E.	29.2	32.0	33.8	40.9	43.2	45.5	52.4	54.2	57.0	42 43.13	− 0.09	−70.80	−70.80	17 41 32.24	0.00
	7	Mercury II, C.	E.	. .	. .	. .	. .	. .	. .	. .	48.1	51.0	59 37.44	+ 0.06	. .	−70.80	17 58 26.70	− 0.17
	8	δ Ursæ Minoris	E.	. .	. .	. .	. .	. .	. .	. .	7.0	57.0	13 31.40	− 2.04	. .	−70.80	18 12 18.56	+ 0.19
31	9	X, 13	F.	23.0	25.9	27.6	34.3	36.7	38.9	45.9	47.4	50.3	38 36.67	+ 0.03	. .	−70.77	10 37 25.93	− 3.02
	10	α Ursæ Majoris (R.)	F.	45.3	50.9	54.1	7.6	12.0	16.3	29.5	33.0	38.5	57 11.91	+ 0.34	. .	−70.77	10 56 1.48	− 0.16
	11	δ Leonis	F.	25.5	28.5	29.9	36.4	38.7	40.8	47.4	49.0	51.8	8 38.67	+ 0.03	−70.81	−70.77	11 7 27.93	− 0.02
	12	δ Crateris	F.	3.8	6.6	8.0	14.3	16.4	18.5	24.9	26.3	29.1	14 16.43	+ 0.02	−70.88	−70.77	11 13 5.78	+ 0.19
	13	ο Cephei, S. P.	F.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .		. .
	14	β Leonis	F.	39.2	41.8	43.3	49.7	51.9	53.9	0.3	1.8	4.5	43 51.82	+ 0.02	−70.77	−70.77	11 42 41.07	− 0.02
	15	η Virginis (R.)	F.	. .	. .	37.0	39.2	41.3	43.3	45.3	. .	. .	14 41.22	+ 0.10	. .	−70.77	12 13 30.55	+ 0.08
	16	12 Canum Venat.	F.	5.7	9.0	10.8	18.6	21.2	24.0	32.0	33.8	37.0	51 21.34	+ 0.05	−70.70	−70.77	12 50 10.62	− 0.07
	17	Polaris, S. P.	F.	. .	. .	55.0	24.0	59.0	. .	. .	. .	. .	13 59.43	− 4.20	. .	−70.77	1 12 44.46	− 0.19
	18	α Virginis	F.	34.0	36.8	38.3	44.6	46.6	48.5	54.8	56.4	59.0	19 46.56	+ 0.02	−70.70	−70.77	13 18 35.81	− 0.09
	19	ζ Virginis	F.	17.3	20.0	21.4	27.5	29.6	31.6	37.7	39.2	41.7	29 29.56	+ 0.02	−70.74	−70.77	13 28 18.81	− 0.03

3. Bisections at set C.
8. Wire D_8 in right ascension probably 17ˢ.0.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith-Point Correction.	Apparent Zenith Distance, South.	External Thermom'r.	Refraction.	Apparent North-Polar Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″	°	′ ″	° ′ ″	″
1	310 44	10 23.2	10.0	1.8	6.4	31	. .	385	. .	365	. .	75.7	49 11 15.7	. .	+ 1 11.2	100 18 48.1	+ 0.5
2	0 12	27.9	15.4	7.5	9.6	34	. .	760	. .	750	. .	75.7	359 44 12.5	. .	— 0.3	50 50 33.4	+ 1.1
3	43 16	29.2	16.2	7.0	8.8	35	810	. .	. .	. .	800	75.7	316 40 28.6	. .	— 57.8	7 45 52.0	— 0.4
4	335 34	22.4	8.6	0.8	2.6	31	. .	570	. .	535	. .	75.7	24 21 16.8	. .	+ 27.7	75 28 5.7	+ 0.3
5	333 42	19.0	5.0	28.1	1.0	35	. .	090	. .	070	. .	75.7	26 14 8.0	. .	+ 30.1	77 20 59.3	— 0.1
6	348 50	22.9	8.4	2.1	4.3	34	. .	040	. .	980	. .	75.7	11 5 55.4	. .	+ 12.0	62 12 28.6	+ 1.4
7	296 42	19.4	6.3	28.0	1.9	33	. .	. .	. .	240	360	75.7	63 13 41.4	. .	+ 2 0.2	114 22 2.8	. .
8	47 38	22.0	13.5	6.0	7.0	35	. .	. .	. .	650	590	75.7	312 18 23.8	. .	— 1 6.8	3 23 38.2	— 4.4
9	294 26	21.8	5.2	26.2	3.2	33	. .	344	. .	340	. .	78.5	65 29 44.8	17.4	+ 2 19.2	116 38 25.2	— 7.2
10	156 24	19.6	3.8	24.8	29.4	31	. .	608	. .	540	. .	78.5	203 31 15.1	. .	+ 27.8	27 34 38.3	— 3.7
11	342 16	16.5	1.1	22.5	28.6	37	. .	986	. .	980	. .	78.5	17 40 51.8	. .	+ 20.4	68 47 33.4	— 0.2
12	306 58	8.5	22.3	13.6	20.8	36	. .	084	. .	094	. .	78.5	52 58 14.2	. .	+ 1 24.5	104 5 59.9	— 0.7
13	73 34	23.8	6.4	27.3	1.5	38	898	. .	. .	. .	. .	78.5	286 23 8.5	. .	— 3 34.7	337 25 55.0	+ 3.3
14	336 20	8.9	22.3	12.4	19.5	39	. .	090	. .	092	. .	78.5	23 36 59.8	. .	+ 27.9	74 43 48.9	+ 1.0
15	218 46	18.5	0.8	23.6	26.9	30	. .	. .	. .	344	352	78.5	141 8 55.4	16.0	— 51.5	89 58 17.3	— 0.7
16	0 2	12.2	26.8	19.0	23.3	35	. .	880	. .	890	. .	78.5	359 54 15.4	. .	— 0.1	51 0 36.5	+ 1.4
17	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .		. .	. .		. .
18	310 34	11.0	24.1	17.5	23.2	38	. .	370	. .	380	. .	78.5	49 22 51.8	. .	+ 1 14.5	100 30 27.5	+ 0.6
19	321 6	14.0	27.5	18.7	20.8	35	. .	478	. .	484	. .	78.5	38 50 8.9	16.1	+ 51.5	89 57 21.6	— 1.4

No.	Barom.	At. Ther.
	in.	°
9	30.67	21.2
15	30.64	19.5
19	30.65	18.5

For summary of the elements of reduction see page 3.

No.	Parallax.	Semi-diam.	Defective Illumination.	Sum.
	′ ″	′ ″	′ . ″	′ ″
7	— 5.6	. .	0.0	— 5.6

OBSERVATIONS

WITH THE

MURAL CIRCLE.

1874.

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1874. Jan. 8	1	Lalande 1702 . .	. .	3	V–IX	23 55 5.6	6.2	8.9	12.7	8.1	1.5	7.17	35.206	−0.704	34.485
	2	Lalande 2027 . .	. .	3	III–VII	21 25 2.2	3.3	5.5	9.7	6.2	58.9	4.30	28.323	. .	27.612
	3	B. A. C. 4498, S. P. .	. .	3	I–5	324 20 3.4	2.8	8.1	8.2	6.1	59.1	4.62	31.611	. .	30.909
	4	Anon. $1^h\ 31^m\ 5^s$. .	. .	3	III–VII	91 45 4.8	6.1	9.1	14.1	8.9	1.0	7.33	26.417	. .	25.719
	5	Anon. $1^h\ 39^m\ 25^s$. .	7.5	3	III–VII	20 45 2.2	3.1	6.8	8.8	6.4	59.0	4.38	28.172	. .	27.460
	6	*i* Draconis, S. P. . .	. .	3	IV–VI	304 15 4.1	1.8	7.3	9.2	6.0	59.5	4.65	25.264	. .	24.566
	7	Weisse I, 963 . .	9.0	3	V–IX	55 25 6.0	7.6	11.2	16.7	11.7	3.0	9.37	28.319	. .	27.612
	8	Weisse II, 51. . .	8.2	3	III–VII	54 55 1.2	2.2	3.7	8.8	4.4	oblit.	3.02	34.363	. .	33.658
	9	Weisse II, 188 . .	. .	3	III–VII	45 50 2.3	2.1	5.8	9.9	5.8	58.2	4.02	35.362	. .	34.656
	10	Anon. $2^h\ 21^m\ 16^s$. .	6.5	3	V–IX	22 10 3.8	6.1	8.9	13.4	8.4	1.6	7.03	35.727	. .	35.005
	11	Lacaille 796 . .	7.0	3	III–VII	83 20 5.8	8.4	10.2	16.3	8.7	2.4	8.63	31.092	. .	30.392
	12	Weisse (2) II, 972 .	8.0	3	III–VII	34 10 3.7	6.7	10.2	13.6	7.8	1.9	7.32	36.406	. .	35.698
	13	Anon. $2^h\ 52^m\ 44^s$. .	. .	3	V–IX	44 15 0.6	1.9	2.2	7.3	1.9	55.9	1.63	32.232	. .	31.520
	14	Anon. $3^h\ 4^m\ 56^s$. .	9.0	3	III–VII	20 25 3.9	6.3	8.0	13.4	8.2	0.1	6.65	28.143	. .	27.431
	15	B. A. C. 1047. . .	6.5	3	III–VII	85 55 6.2	8.9	11.0	18.0	10.5	3.0	9.60	30.371	. .	29.672
	16	17 Eridani	5.0	3	III–VII	64 25 2.8	2.7	6.3	11.8	4.4	59.1	4.52	34.276	. .	33.573
	17	B. A. C. 1150 . .	. .	3	III–VII	91 10 3.8	7.0	7.8	14.0	6 8	1.1	6.75	28.208	. .	27.510
	18	Anon. $3^h\ 45^m\ 20^s$. .	6.8	3	III–VII	91 30 1.9	4.2	5.3	11.1	5.2	57.9	4.27	28.994	. .	28.296
	19	Anon. $3^h\ 54^m\ 32^s$. .	8.5	3	III–VII	23 50 0.7	2.2	4.4	9.2	3.6	56.9	2.83	29.624	. .	28.913
	20	Anon. $4^h\ 1^m\ 18^s$. .	7.0	3	III–VII	90 15 1.8	4.3	5.8	11.4	4.2	57.2	4.12	31.621	. .	30.923
	21	B. A. C. 1340 . .	6.8	3	III–VII	84 10 3.6	6.5	9.0	15.4	6.5	0.3	6.88	28.133	. .	27.434
	22	Lacaille 1480 . .	7.5	3	III–VII	88 10 4.4	9.8	9.0	15.9	7.7	2.7	8.25	31.823	. .	31.125
	23	Anon. $4^h\ 34^m\ 17^s$. .	6.5	3	III–VII	20 40 2.4	6.5	8.9	13.9	7.7	0.2	6.60	26.168	. .	25.456
	24	Nadir	. .	.	. .	200 0 2.6	4.9	6.8	13.9	4.5	0.9	5.60	30.733	. .	. .
10	25	Weisse O, 89. . .	. .	3	III–VII	8 5 1.9	1.7	2.8	7.4	5.4	0.8	3.33	34.315	−0.785	33.518
	26	Anon. $1^h\ 14^m\ 8^s$. .	8.5	3	V–IX	52 55 3.4	2.7	5.0	10.0	6.4	1.0	4.75	30.139	. .	29.351
	27	O. Arg. S. 850 (2d *)	8.5	3	III–VII	76 50 4.3	4.1	8.1	11.8	9.2	1.0	6.42	36.193	. .	35.411
	28	Lalande 3025 . .	8.0	3	III–VII	20 35 3.8	4.1	7.5	11.2	9.2	1.1	6.15	33.552	. .	32.759
	29	Anon. $1^h\ 39^m\ 25^s$. .	8.0	3	III–VII	20 45 2.4	2.9	5.2	8.8	6.8	59.3	4.23	28.243	. .	27.450
	30	ζ Ceti	. .	3	IV–VIII	69 50 3.2	2.8	5.6	10.3	6.4	0.2	4.75	30.753	. .	29.969
	31	O. Arg. S. 1388 . .	8.3	3	III–VII	88 25 3.3	3.2	5.7	9.9	6.8	0.5	4.90	32.174	. .	31.394
	32	Weisse II, 188 . .	8.5	3	III–VII	45 50 3.7	3.2	5.9	10.1	7.0	0.4	5.05	35.524	. .	34.737
	33	Lacaille 750 . . .	7.8	3	III–VII	82 40 4.1	4.8	7.0	11.9	7.3	0.3	5.90	34.529	. .	33.744
	34	O. Arg. S. 1780 . .	8.5	3	III–VII	87 50 3.2	3.7	3.6	10.9	5.0	0.0	4.40	31.472	. .	30.692
	35	20 Persei.	5.0	3	III–VII	21 5 8.0	8.9	10.8	16.9	12.8	6.0	10.57	32.838	. .	32.046
	36	Anon. $2^h\ 58^m\ 3^s$. .	9.0	3	IV–VI	21 45 2.9	4.6	7.3	10.7	8.3	1.9	5.95	26.294	. .	25.507
	37	Anon. $3^h\ 5^m\ 19^s$. .	8.5	1	V	20 25 3.4	4.9	6.8	11.4	8.7	0.3	5.92	33.599	. .	32.814
	38	Anon. $3^h\ 5^m\ 35^s$. .	8.5	2	V, VII	" " "		"	"	"	"	"	33.061	. .	32.269
	39	B. A. C. 1047 . .	. .	2	III, V	85 55 3.2	4.8	7.1	12.2	7.2	0.1	5.77	30.252	. .	29.472
	40	Nadir	. .	.	. .	200 0 0.5	0.2	2.4	8.2	2.1	58.1	1.92	30.695	. .	. .
12	41	ζ Ceti	5.0	3	III–VII	69 50 2.7	8.8	8.5	15.2	8.2	0.0	7.23	30.821	−0.734	30.089
	42	Weisse I, 51 . . .	8.3	3	III–VII	54 55 3.1	6.9	7.0	14.2	7.8	oblit.	6.15	34.523	. .	33.788
	43	Anon. $2^h\ 10^m\ 52^s$. .	8.5	3	IV–VI	3 35 0.1	3.9	6.1	10.5	4.2	56.0	3.47	29.243	. .	28.505
	44	Lalande 4761 . .	7.0	3	III–VII	22 25 0.1	3.8	4.9	9.9	4.5	55.9	3.18	34.508	. .	33.767
	45	σ Arietis	. .	3	III–VII	44 20 3.4	8.4	8.1	15.2	7.7	59.5	7.05	32.072	. .	31.336
	46	Lalande 5682 . .	8.5	2	V, VII	20 45 3.2	6.2	7.7	13.8	7.1	57.9	5.98	27.635	. .	26.894
	47	17 Eridani	. .	3	III–VII	64 25 5.2	8.8	10.1	17.0	9.4	0.4	8.48	34.543	. .	33.810
	48	Nadir	. .	.	. .	200 0 1.2	6.8	5.7	15.4	4.5	59.8	5.57	30.763	. .	. .
14	49	Lalande 3025 . .	7.5	3	III–VII	20 35 3.9	6.2	8.9	12.0	9.7	1.6	7.05	33.560	−0.785	32.767
	50	Anon. $1^h\ 39^m\ 25^s$. .	7.5	3	III–VII	20 45 1.4	1.7	4.0	7.0	5.4	55.9	2.57	28.198	. .	27.405
	51	B. A. C. 576 . . .	5.5	3	III–VII	22 25 3.9	4.3	7.7	10.9	8.8	59.6	5.87	34.936	. .	34.144
	52	Weisse I, 963 . .	. .	1	V	55 25 3.6	4.7	7.9	13.0	10.2	0.2	6.60	28 402	. .	27.617
	53	O. Arg. S. 1388 . .	8.5	3	III–VII	88 25 5.2	8.4	8.3	13.2	9.6	2.0	7.78	32.347	. .	31.567
	54	Lalande 4387 . .	7.5	3	V–IX	20 5 1.1	1.8	4.8	7.9	4.5	56.1	2.70	26.820	. .	26.016
	55	Lacaille 750 . . .	. .	3	V–IX	82 40 4.8	8.2	9.2	13.7	8.8	0.5	7.53	34.649	. .	33.871
	56	Lacaille 796 . . .	7.5	3	III–VII	83 20 0.4	3.4	4.4	10.2	4.5	57.0	3.32	31.042	. .	30.261
	57	O. Arg. S. 1780 . .	8.5	3	III–VII	87 50 6.3	8.2	9.7	15.2	10.2	2.1	8.62	31.499	. .	30.719
	58	20 Persei.	4.5	3	V–IX	21 5 0.1	2.2	3.0	8.4	4.4	57.2	2.55	32.581	. .	31.778
	59	Lalande 5682 . .	8.5	3	III–VII	20 45 5.6	7.2	9.1	13.2	9.1	1.2	7.57	27.770	. .	26.977
	60	Weisse (2) III, 209 .	9.2	3	III–VII	35 0 3.1	7.1	9.1	12.9	8.2	59.8	6.70	27.805	. .	27.016
	61	Weisse (2) III, 393 .	6.5	3	III–VII	40 35 6.0	8.8	10.2	15.9	10.2	3.9	9.17	32.332	. .	31.541
	62	Lacaille 1124 . .	7.0	3	V–IX	84 55 4.8	9.2	10.8	16.3	11.2	2.3	9.10	32.617	. .	31.840
	63	Lacaille 1196 . .	7.0	3	III–VII	90 15 1.9	5.9	6.6	11.1	6.1	58.1	4.95	28.605	. .	27.826
	64	Groombridge 751 .	8.3	1	V	343 5 3.0	3.3	5.7	9.7	6.2	58.0	4.32	27.272	. .	26.487
	65	Groombridge 748 .	8.5	1	V	" " "	"	"	"	"	"	"	29.174	−0.785	28.389

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1874.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	′		
1	29.990	48.2	39.5	− 2 20.6	S. 3 52 46.6	4.0	+ 35 0 48.2	− 7.4	Y.	
2	. .	. .	. .	+ 1 14.9	S. 1 26 19.2	1.5	+ 37 27 18.1	− 8.4	Y.	
3	29.796	47.5	39.2	− 28.5	N. 55 40 23.8	1 26.4	+ 85 24 31.0	+ 21.0	Y.	
4	. .	. .	38.8	+ 2 14.2	S. 71 47 21.5	2 58.5	− 32 56 41.2	+ 14.1	Y.	
5	. .	. .	. .	+ 1 19.6	S. 0 46 24.0	0.8	+ 38 7 14.0	− 9.7	Y.	
6	29.810	47.0	38.3	+ 2 50.3	N. 75 42 5.0	3 48.7	+ 65 20 27.5	+ 18.8	Y.	
7	. .	. .	. .	+ 1 14.8	S. 35 26 24.2	42.2	+ 3 26 32.4	+ 1.6	Y.	
8	. .	. .	. .	− 1 54.7	34 53 8.4	41.3	+ 3 59 49.1	+ 1.1	Y.	−0″.96 applied to mean of A, B, C, and D.
9	. .	. .	. .	− 2 25.9	25 47 38.1	28.7	+ 13 5 32.0	− 2.3	Y.	
10	. .	. .	. .	− 2 36.9	2 7 30.2	2.2	+ 36 46 6.4	− 10.1	Y.	
11	29.822	46.0	38.1	− 12.3	63 19 56.4	1 57.6	− 24 28 15.2	+ 9.3	Y.	
12	. .	. .	. .	− 2 58.6	14 7 8.7	14.9	+ 21 46 15.2	− 6.7	Y.	
13	. .	. .	. .	− 47.6	24 14 14.0	26.7	+ 14 38 58.1	− 3.8	Y.	
14	. .	. .	. .	+ 1 20.5	0 26 27.2	0.5	+ 38 27 11.1	− 11.0	Y.	
15	29.820	44.2	36.4	+ 10.3	65 55 19.9	2 12.6	− 27 3 53.7	+ 7.8	Y.	
16	. .	. .	. .	− 1 52.0	44 23 12.5	58.3	− 5 30 32.0	+ 1.6	Y.	
17	. .	. .	36.1	+ 1 18.1	71 11 24.8	2 53.3	− 32 20 39.3	+ 7.8	Y.	
18	. .	. .	. .	+ 53.5	71 30 57.7	2 56.5	− 32 40 15.4	+ 7.4	Y.	
19	. .	. .	. .	+ 34.1	3 50 36.9	4.0	+ 35 2 57.9	− 10.1	Y.	
20	29.830	43.8	36.1	− 28.9	70 14 35.2	2 44.5	− 31 23 40.9	+ 6.3	Y.	
21	. .	. .	. .	+ 1 20.4	64 11 27.3	2 2.7	− 25 19 51.2	+ 4.3	Y.	
22	29.843	43.0	35.7	− 35.2	68 9 33.0	2 27.9	− 29 18 22.1	+ 4.5	Y.	
23	. .	. .	. .	+ 2 22.4	S. 0 42 29.0	0.7	+ 38 11 9.1	− 10.4	Y.	
24	. .	. .	. .	. .		. .		. .	Y.	
25	. .	. .	. .	− 1 50.3	N. 11 56 47.0	12.4	+ 50 50 38.2	− 9.9	Y.	
26	. .	. .	. .	+ 20.3	S. 32 55 25.1	38.0	+ 5 57 35.7	+ 2.0	Y.	
27	29.665	47.5	41.2	− 2 49.6	56 47 16.9	1 29.4	− 17 55 7.5	+ 10.0	Y.	
28	. .	. .	. .	− 1 26.5	0 33 39.7	0.6	+ 38 19 58.5	− 9.6	Y.	
29	. .	. .	. .	+ 1 19.9	0 46 24.2	0.8	+ 38 7 13.8	− 9.7	Y.	
30	29.670	47.0	40.2	+ 1.0	49 50 5.7	1 9.6	− 10 57 36.5	+ 6.9	Y.	
31	. .	. .	. .	− 43.7	68 24 21.2	2 27.5	− 29 33 9.9	+ 11.9	Y.	
32	. .	. .	. .	− 2 28.4	25 47 36.6	28.4	+ 13 5 33.8	− 2.2	Y.	
33	29.676	46.2	39.5	− 1 57.3	62 38 8.6	1 53.3	− 23 46 23.1	+ 9.5	Y.	
34	. .	. .	. .	− 21.7	67 49 42.7	2 23.6	− 28 58 27.5	+ 10.3	Y.	
35	. .	. .	. .	− 1 4.1	1 4 6.4	1.1	+ 37 49 31.3	− 10.8	Y.	
36	. .	. .	. .	+ 2 20.8	1 47 26.8	1.8	+ 37 6 10.2	− 10.8	Y.	
37	. .	. .	. .	− 1 28.2	0 23 37.7	0.4	+ 38 30 0.7	− 11.2	Y.	
38	. .	. .	. .	− 1 11.1	0 23 54.8	0.4	+ 38 29 43.6	− 11.2	Y.	
39	29.690	45.5	39.2	+ 16.5	65 55 22.3	2 11.2	− 27 3 54.7	+ 8.0	Y.	Cloudy.
40	. .	. .	. .	. .		. .		. .	Y.	
41	30.322	36.0	31.5	− 2.8	49 50 4.5	1 12.4	− 10 57 38.1	+ 7.0	Y.	
42	. .	. .	. .	− 1 58.7	S. 34 53 7.4	41.7	+ 3 59 49.7	+ 1.2	Y.	−1″.65 applied to mean of A, B, C, and D.
43	. .	. .	. .	+ 46.8	N. 16 24 9.7	18.0	+ 55 18 6.5	− 15.2	Y.	
44	30.340	36.2	31.0	− 1 58.1	S. 2 23 5.1	2.6	+ 36 30 31.1	− 10.3	Y.	
45	. .	. .	. .	− 41.9	24 19 25.2	27.7	+ 14 33 45.9	− 3.5	Y.	
46	. .	. .	. .	+ 1 37.3	0 46 43.3	0.8	+ 38 6 54.7	− 11.2	Y.	
47	30.360	36.5	30.4	− 1 59.4	44 23 9.1	1 0.1	− 5 30 30.4	+ 1.8	Y.	
48	. .	. .	. .	. .		. .		. .	Y.	
49	. .	. .	. .	− 1 26.7	0 33 40.3	0.6	+ 38 19 57.9	− 9.5	Y.	
50	. .	. .	. .	+ 1 21.3	0 46 23.9	0.8	+ 38 7 14.1	− 9.6	Y.	
51	29.936	40.2	30.7	− 2 9.9	2 22 56.0	2.5	+ 36 30 40.3	− 9.3	Y.	
52	. .	. .	. .	+ 1 14.7	35 26 21.3	43.1	+ 3 26 34.4	+ 1.8	Y.	
53	29.930	39.0	29.7	− 49.1	68 24 18.7	2 32.1	− 29 33 12.0	+ 12.2	Y.	
54	. .	. .	. .	+ 2 4.8	0 7 7.5	0.1	+ 38 46 31.2	− 10.8	Y.	
55	. .	. .	29.4	− 2 1.3	62 38 6.2	1 56.7	+ 23 46 24.1	+ 9.8	Y.	
56	. .	. .	. .	− 8.2	63 19 55.1	2 0.3	− 24 28 16.6	+ 9.6	Y.	
57	29.926	38.0	29.2	− 22.5	67 49 46.1	2 27.9	− 28 58 35.2	+ 10.6	Y.	
58	. .	. .	. .	− 55.7	1 4 6.8	1.1	+ 37 49 30.9	− 11.0	Y.	
59	. .	. .	. .	+ 1 34.7	0 46 42.3	0.8	+ 38 6 55.7	− 11.2	Y.	
60	. .	. .	. .	+ 1 33.5	15 1 40.2	16.3	+ 23 51 42.3	− 7.0	Y.	
61	. .	. .	. .	− 48.4	20 34 20.8	22.8	+ 18 18 55.2	− 5.4	Y.	
62	29.952	37.2	28.4	− 57.7	64 54 11.4	2 9.2	− 26 2 41.8	+ 7.6	Y.	
63	. .	. .	. .	+ 1 8.1	S. 70 16 13.1	2 48.2	− 31 25 22.5	+ 8.3	Y.	
64	. .	. .	. .	+ 1 50.1	N. 36 53 5.6	45.6	+ 75 47 30.0	− 19.2	Y.	
65	. .	. .	. .	+ 50.5	N. 36 54 5.2	45.7	+ 75 48 29.7	− 19.2	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed	Nadir cor.	Corr'd.
1874.						° ′ ″	″	″	″	″	″	″	r.	r.	r.
Jan. 14	1	Weisse (2) III, 1275.	9.5	3	III–VII	38 0 3.0	4.3	7.2	13.4	7.5	59.3	5.78	35.313	−0.785	34.524
	2	Lacaille 1480. . .	7.0	3	V–IX	88 10 4.8	9.3	9.1	15.2	9.3	0.9	8.10	31.939	. .	31.164
	3	Anon. $4^h\ 34^m\ 20^s$.	. .	3	III–VII	20 40 4.0	8.0	9.7	15.2	9.8	0.9	7.93	26.262	. .	25.469
	4	Weisse IV, 957 . .	5.5	3	III–VII	44 50 3.9	7.3	8.7	14.7	8.8	0.2	7.27	29.541	. .	28.754
	5	64 Eridani	5.0	3	III–VII	71 35 5.6	8.0	10.8	15.8	9.8	2.8	8.80	29.386	. .	28.603
	6	Rumker 2553 . .	8.0	3	III–VII	28 45 5.3	9.1	11.2	17.8	12.4	2.8	9.60	31.287	. .	30.496
	7	Nadir	. .	.	. .	200 0 2.1	7.2	5.6	15.0	5.8	0.5	6.03	30.828	. .	. .
16	8	Polaris	. .	3	2–4	330 15 2.3	5.3	8.3	11.6	7.0	58.1	5.43	28.200	−0.609	27.589
	9	B. A. C. 4506, S. P. .	6.0	3	IV–VI	312 0 2.9	4.8	7.2	10.4	7.2	55.8	4.72	33.307	. .	32.708
	10	Anon. $1^h\ 33^m\ 37^s$.	7.5	3	III–VII	21 15 5.0	10.3	11.1	15.7	11.8	0.7	9.10	29.285	. .	28.669
	11	Anon. $1^h\ 41^m\ 2^s$.	8.0	3	III–VII	51 50 1.9	7.1	5.2	12.9	7.9	59.1	5.68	31.403	. .	30.795
	12	B. A. C. 742 . . .	6.5	3	III–VII	89 20 4.1	10.1	8.7	14.1	9.7	59.4	7.68	35.572	. .	34.969
	13	Weisse (2) II, 711 .	. .	3	III–VII	33 15 5.5	10.6	11.0	18.2	10.8	0.6	9.45	33.163	. .	32.549
	14	σ Arietis	. .	3	III–VII	44 20 2.6	7.5	9.2	14.2	7.6	58.9	6.67	31.908	. .	31.297
	15	Nadir	. .	.	. .	199 59 59.5	63.8	63.1	72.2	62.2	57.4	63.03	30.555	. .	. .
24	16	Moon S.	. .	1	V	47 19 54.7	55.8	58.0	59.9	57.8	51.5	56.28	29.722	−0.635	29.087
	17	ι Cassiopeæ . . .	. .	3	IV–VI	352 5 4.0	5.7	9.4	12.7	7.2	59.1	6.35	33.095	. .	32.453
	18	Weisse (2) II, 711 .	8.8	3	III–VII	33 15 1.2	3.6	5.6	10.0	4.7	57.9	3.83	33.036	. .	32.396
	19	B. A. C. 854 . . .	. .	3	III–VII	84 55 0.2	1.8	5.8	10.8	4.3	57.9	3.47	33.446	. .	32.816
	20	17 Persei.	4.5	3	V–IX	24 20 4.8	6.6	9.8	14.1	8.2	0.8	7.38	28.937	. .	28.286
	21	Anon. $2^h\ 58^m\ 2^s$.	8.2	3	III–VII	21 45 4.8	6.8	9.2	14.3	9.2	1.0	7.55	26.250	. .	25.608
	22	Anon. $3^h\ 4^m\ 56^s$.	. .	2	I, IX	20 25 2.3	3.5	6.6	11.2	5.5	58.2	4.55	28.022	. .	27.318
	23	Anon. $3^h\ 5^m\ 6^s$.	. .	3	III–VII	" " "	"	"	"	"	"	"	33.413	. .	32.770
	24	Weisse (2) III, 393 .	7.5	3	III–VII	40 35 3.5	3.7	7.5	11.7	5.0	0.2	5.27	32.050	. .	31.412
	25	Lacaille 1124. . .	7.0	3	III–VII	84 55 4.8	6.4	11.2	15.5	8.2	2.0	8.02	32.409	. .	31.779
	26	21 Tauri	6.0	2	III, V	34 45 2.8	4.8	7.2	11.8	4.2	58.9	4.95	33.282	. .	32.645
	27	22 Tauri	7.0	2	VII, IX	" " "	"	"	"	"	"	"	30.274	. .	29.622
	28	O. Arg. S. 2571 . .	7.0	3	III–VII	86 20 6.1	7.9	11.7	17.2	8.3	2.6	8.97	28.893	. .	28.263
	29	Lalande 7391 . .	8.0	3	III–VII	20 10 0.0	2.2	5.2	9.2	2.9	55.2	2.45	32.951	. .	32.308
	30	O. Arg. S. 2803 . .	8.3	3	III–VII	82 30 3.0	5.0	6.8	12.9	4.2	58.2	5.02	32.469	. .	31.838
	31	o^2 Eridani	5.0	3	V–IX	66 45 5.0	6.8	9.9	15.2	6.8	1.9	7.60	33.510	. .	32.876
	32	Weisse (2) IV, 344 .	8.2	3	III–VII	42 20 3.4	5.8	8.1	13.4	7.0	1.1	6.47	35.520	. .	34.882
	33	Anon. $4^h\ 23^m\ 55^s$.	8.0	2	VII, IX	91 35 5.8	8.6	10.2	16.2	8.2	1.7	8.45	29.994	. .	29.376
	34	Weisse IV, 727 . .	8.2	3	III–VII	56 40 3.3	3.1	6.9	12.1	4.8	0.1	5.05	35.989	. .	35.354
	35	Anon. $4^h\ 42^m\ 32^s$.	8.5	3	III–VII	48 10 5.5	7.2	10.1	16.9	9.1	3.4	8.70	34.517	. .	33.880
	36	Lacaille 1659 (1st *).	8.5	2	VII, IX	98 45 2.9	7.2	9.2	12.9	6.2	57.9	6.05	28.204	. .	27.592
	37	Lacaille 1659 (2d *).	8.0	1	V	" " "	"	"	"	"	"	"	28.404	. .	27.769
	38	Weisse (2) V, 249 .	9.0	1	V	28 35 3.8	6.7	7.9	14.9	6.7	0.6	6.77	28.117	. .	27.482
	39	Anon. $5^h\ 5^m\ 57^s$.	10.0	2	V, IX	" " "	"	"	"	"	"	"	31.736	. .	31.085
	40	Anon. $5^h\ 19^m\ 4^s$.	8.8	1	V	19 49 59.4	61.4	62.9	68.2	60.8	53.2	60.98	30.550	. .	29.915
	41	Anon. $5^h\ 20^m\ 32^s$.	8.5	2	VII, IX	" " "	"	"	"	"	"	"	32.945	. .	32.282
	42	Anon. $5^h\ 27^m\ 53^s$.	9.0	3	III–VII	72 30 3.0	6.4	9.4	15.5	5.4	58.9	6.43	31.546	. .	30.913
	43	Nadir	. .	.	. .	200 0 5.8	10.2	11.7	19.8	7.2	4.1	9.80	30.800	. .	. .
29	44	ι Cassiopeæ . . .	4.5	3	IV–VI	352 5 2.2	5.1	5.2	5.8	8.2	59.4	4.32	32.949	−0.554	32.388
	45	B. A. C. 854 . . .	7.0	3	III–VII	84 55 1.1	2.1	3.3	6.4	8.0	0.2	3.52	33.199	. .	32.650
	46	17 Persei.	4.5	3	III–VII	24 20 5.2	6.2	6.3	8.2	10.1	1.1	6.18	28.765	. .	28.204
	47	66 Arietis	6.0	3	III–VII	36 30 1.0	2.8	1.8	3.8	6.8	58.1	2.38	28.378	. .	27.820
	48	Anon. $3^h\ 38^m\ 25^s$.	. .	2	III, V	38 45 6.1	8.4	7.7	9.9	11.5	3.2	7.80	33.235	. .	32.679
	49	Anon. $3^h\ 38^m\ 30^s$.	. .	2	VII, IX	" " "	"	"	"	"	"	"	30.238	. .	29.669
	50	Groombridge 745 . .	. .	1	V	343 5 1.2	1.5	3.2	3.2	6.8	58.0	2.32	29.719	. .	29.165
	51	Groombridge 748 .	8.5	2	IV, VI	" " "	"	"	"	"	"	"	29.046	. .	28.475
	52	Groombridge 751 .	8.0	1	V	" " "	"	"	"	"	"	"	26.978	. .	26.424
	53	O. Arg. S. 2803 . .	8.0	3	III–VII	82 30 4.9	4.9	4.9	7.9	8.9	1.0	5.42	32.219	. .	31.669
	54	o^3 Eridani	. .	3	III–VII	66 45 5.0	6.4	6.1	9.3	9.4	2.9	6.52	33.267	. .	32.714
	55	Weisse (2) IV, 344 .	7.5	3	III–VII	42 20 6.3	9.1	8.8	11.2	13.8	5.9	9.18	35.483	. .	34.926
	56	84 Tauri	6.0	3	III–VII	44 5 0.1	1.3	0.9	4.2	6.0	58.9	1.90	33.969	. .	33.412
	57	Weisse IV, 727 . .	8.0	3	III–VII	56 40 4.0	3.8	4.0	6.8	9.2	2.4	5.03	35.841	. .	35.287
	58	B. A. C. 1471 . .	6.0	3	III–VII	86 40 4.3	5.1	5.9	9.6	8.9	2.8	6.10	30.305	. .	29.756
	59	Lacaille 1659 (2d *) .	8.2	3	I–IX	98 45 4.1	7.3	5.2	8.4	9.7	1.9	6.10	27.992	. .	27.465
	60	103 Tauri	6.5	3	V–IX	34 45 6.5	8.1	8.8	10.8	11.1	4.0	8.22	26.082	. .	25.517
	61	Anon. $5^h\ 7^m\ 51^s$.	7.5	3	III–VII	28 35 3.6	4.1	5.3	8.9	10.3	3.2	5.90	35.997	. .	35.437
	62	Anon. $5^h\ 14^m\ 35^s$.	8.5	3	III–VII	84 15 4.1	5.4	6.9	8.8	9.8	1.9	6.15	31.126	. .	30.577
	63	Schjellerup 1787 .	8.3	3	III–VII	59 15 7.9	10.5	10.2	13.0	14.8	8.2	10.77	31.133	. .	30.579
	64	Lalande 10621 . .	8.0	3	III–VII	20 45 0.9	2.7	2.2	3.9	6.2	57.9	2.30	28.100	. .	27.538
	65	Lalande 10666 . .	6.5	1	V	" " "	"	"	"	"	"	"	29.648	−0.554	29.094

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1874.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	— 2 21.8	S. 17 57 44.0	19.7	+ 20 55 35.1	— 6.7	Y.	
2	29.956	36.2	28.2	— 36.5	68 9 31.6	2 30.8	— 29 18 23.6	+ 5.4	Y.	
3	. .	. .	. .	+ 2 22.0	0 42 29.9	0.8	+ 38 11 8.1	— 11.0	Y.	
4	. .	. .	. .	+ 39.0	24 50 46.3	28.2	+ 14 2 24.3	— 5.2	Y.	
5	. .	. .	. .	+ 43.8	51 35 52.6	1 16.7	— 12 43 30.5	+ 0.7	Y.	
6	29.950	36.0	27.0	— 15.5	S. 8 44 54.2	9.4	+ 30 8 35.2	— 8.8	Y.	
7	. .	. .	. .	. .		. .		. .	Y.	
8	30.192	29.0	20.4	+ 1 15.6	N. 49 43 39.0	1 13.5	+ 88 38 31.3	— 19.0	Y.	
9	30.194	28.8	20.2	— 1 24.9	N. 68 1 20.2	2 33.6	+ 73 2 27.4	+ 19.7	Y.	
10	. .	. .	. .	+ 41.7	S. 1 15 50.8	1.4	+ 37 37 46.6	— 9.1	Y.	
11	. .	. .	. .	— 24.9	31 49 40.8	38.9	+ 7 3 19.1	+ 1.2	Y.	
12	30.230	27.8	18.4	— 2 35.7	69 17 32.0	2 44.7	— 30 26 37.9	+ 12.0	Y.	
13	. .	. .	. .	— 1 19.9	13 13 49.5	14.8	+ 25 39 35.5	— 6.8	Y.	
14	30.240	27.2	17.7	— 40.7	24 19 26.0	+ 28.4	+ 14 33 44.4	— 3.3	Y.	
15	. .	. .	. .	. .		. .		. .	Y.	
16	30.302	43.5	38.2	+ 28.6	S. 27 20 24.9	−42 20.9	+ 12 15 34.8	. .	Y.	
17	30.310	43.5	37.6	— 1 16.9	N. 27 56 10.6	+ 32.0	+ 66 50 21.4	— 18.2	Y.	
18	. .	. .	. .	— 1 15.1	S. 13 13 48.7	14.2	+ 25 39 35.9	— 6.5	Y.	
19	. .	. .	. .	— 1 28.2	64 53 35.2	2 8.5	— 26 2 4.9	+ 10.5	Y.	
20	. .	. .	. .	+ 53.7	4 21 1.1	4.6	+ 34 32 33.1	— 9.9	Y.	
21	30.340	42.5	36.1	+ 2 17.7	1 47 25.2	1.9	+ 37 6 11.7	— 11.0	Y.	
22	. .	. .	. .	+ 1 23.1	0 26 27.7	0.5	+ 38 27 10.6	— 11.5	Y.	
23	. .	. .	. .	— 1 26.8	0 23 37.7	0.4	+ 38 30 0.7	— 11.6	Y.	
24	. .	. .	. .	— 44.3	20 34 21.0	22.8	+ 18 18 55.0	— 5.1	Y.	
25	30.358	42.0	34.1	— 55.7	64 54 12.3	2 9.4	— 26 2 42.9	+ 8.7	Y.	
26	. .	. .	. .	— 1 22.9	14 43 42.0	16.0	+ 24 9 40.8	— 7.4	Y.	
27	. .	. .	. .	+ 11.8	14 45 16.8	16.1	+ 24 8 5.9	— 7.4	Y.	
28	. .	. .	. .	+ 54.5	66 21 3.4	2 18.5	— 27 29 43.1	+ 8.4	Y.	
29	. .	. .	. .	— 1 12.3	0 8 50.1	0.1	+ 38 44 48.6	— 12.0	Y.	
30	. .	. .	. .	— 57.6	62 29 7.4	1 56.8	— 23 37 25.4	+ 6.7	Y.	
31	30.380	41.0	33.1	— 1 30.1	46 43 37.5	1 4.8	— 7 51 3.5	+ 2.2	Y.	
32	. .	. .	. .	— 2 33.0	22 17 33.5	25.1	+ 16 35 40.2	— 5.4	Y.	Saw no other star.
33	30.390	40.5	32.5	+ 19.6	71 35 28.0	3 2.1	— 32 44 51.3	+ 7.8	Y.	
34	. .	. .	. .	— 2 47.8	36 37 17.3	45.5	+ 2 15 36.0	— 1.4	Y.	
35	. .	. .	. .	— 2 1.6	28 8 7.1	32.8	+ 10 44 58.9	— 3.9	Y.	
36	. .	. .	. .	+ 1 15.5	78 46 21.6	5 1.3	— 39 57 44.1	+ 7.6	Y.	
37	30.494	40.4	32.0	+ 1 9.9	78 46 16.0	5 1.3	— 39 57 38.5	+ 7.6	Y.	
38	. .	. .	. .	+ 1 18.9	8 36 25.7	9.3	+ 30 17 3.8	— 9.2	Y.	
39	. .	. .	. .	— 34.0	8 34 32.8	9.3	+ 30 18 56.7	— 9.2	Y.	
40	. .	. .	. .	+ 2.7	0 9 56.4	0.2	+ 38 43 42.2	— 11.0	Y.	
41	. .	. .	. .	— 1 11.5	0 11 10.6	0.2	+ 38 42 28.0	— 11.0	Y.	
42	. .	. .	. .	— 28.6	S. 52 29 37.8	1 20.0	— 13 37 19.0	+ 1.3	Y.	
43	. .	. .	. .	. .		. .		. .	Y.	Mercury unsteady.
44	30.134	47.2	44.2	— 1 14.9	N. 27 56 10.6	31.4	+ 66 50 20.8	— 18.2	Y.	
45	. .	. .	. .	— 1 23.1	S. 64 53 40.5	2 5.8	— 26 2 7.5	+ 10.6	Y.	
46	. .	. .	. .	+ 56.3	4 21 2.5	4.5	+ 34 32 31.8	— 9.8	Y.	
47	30.136	46.2	41.3	+ 1 8.3	16 31 10.7	17.7	+ 22 22 10.4	— 6.4	Y.	
48	. .	. .	. .	— 1 24.0	18 43 43.8	20.2	+ 20 9 34.8	— 9.4	Y.	
49	. .	. .	. .	+ 10.4	S. 18 45 18.2	20.2	+ 20 8 0.4	— 9.4	Y.	
50	. .	. .	. .	+ 26.2	N. 36 54 31 5	44.7	+ 75 48 55.0	— 21.4	Y.	
51	. .	. .	. .	+ 47.8	36 54 9.9	44.8	+ 75 48 33.5	— 21.4	Y.	
52	30.132	46.0	40.2	+ 1 52.1	N. 36 53 5.6	44.8	+ 75 47 29.2	— 21.4	Y.	
53	. .	. .	. .	— 52.3	S. 62 29 13.1	1 54.2	— 23 37 28.5	+ 7.1	Y.	
54	30.140	45.5	39.9	— 1 25.1	46 43 41.5	1 3.6	— 7 51 6.3	+ 2.5	Y.	
55	. .	. .	. .	— 2 34.4	22 17 34.8	24.5	+ 16 35 39.5	— 5.4	Y.	Saw no other star.
56	. .	. .	. .	— 1 46.9	24 3 15.0	26.7	+ 14 49 57.1	— 4.9	Y.	
57	. .	. .	. .	— 2 45.7	36 37 19.3	44.5	+ 2 15 35.0	— 1.1	Y.	
58	30.124	45.2	38.6	+ 7.7	66 40 13.8	2 18.1	— 27 48 53.1	+ 6.6	Y.	
59	. .	. .	39.2	+ 1 19.5	78 46 25.6	4 53.6	— 39 57 40.4	+ 8.4	Y.	
60	. .	. .	. .	+ 2 20.5	14 47 28.7	15.8	+ 24 5 54.3	— 7.8	Y.	
61	. .	. .	. .	— 2 50.4	8 32 15.5	9.0	+ 30 21 14.3	— 9.5	Y.	
62	. .	. .	. .	— 18.1	64 14 48.1	2 3.6	— 25 23 12.9	+ 4.7	Y.	
63	. .	. .	. .	— 18.1	39 14 52.6	48.9	— 0 22 2.7	— 1.2	Y.	
64	. .	. .	. .	+ 1 17.2	0 46 19.5	0.8	+ 38 7 18.5	— 11.1	Y.	
65	. .	. .	. .	+ 28.4	S. 0 45 30.7	0.8	+ 38 8 7.3	— 11.1	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1874.															
Jan. 29	1	Anon. $5^h\ 37^m\ 38^s$.	8.8	3	III–VII	20 45 0.9	2.7	2.2	3.9	6.2	57.9	2.30	24.383	−0.554	23.821
	2	Lalande 10650 . .	7.5	1	IX	" " "	"	"	"	"	"	"	29.471	. .	28.875
	3	O. Arg. S. 4395 . .	6.5	3	III–VII	84 50 4.3	6.4	8.2	10.2	11.1	3.7	7.32	30.373	. .	29.824
	4	Anon. $5^h\ 53^m\ 9^s$. .	8.5	3	V–IX	90 50 5.9	8.8	9.2	11.4	11.2	3.1	8.27	36.613	. .	36.070
	5	71 Orionis	5.0	3	V–IX	39 39 58.5	60.8	60.9	63.2	64.2	58.5	61.02	27.950	. .	27.387
	6	Anon. $6^h\ 15^m\ 27^s$.	7.5	3	IV–VI	88 25 3.1	5.8	4.1	7.0	7.6	1.8	4.90	31.069	. .	30.517
	7	Lacaille 2232. . .	6.5	1	IX	" " "	"	"	"	"	"	"	25.143	. .	24.613
	8	23 Geminorum . . .	6.5	3	III–VII	42 0 5.2	9.9	8.8	12.0	12.8	5.2	8.98	32.103	. .	31.546
	9	Lacaille 2388. . .	6.0	3	III–VII	89 15 4.2	9.0	6.7	10.8	8.5	3.1	7.05	36.327	. .	35.779
	10	B. A. C. 2244 . .	. .	3	III–VII	86 5 4.4	7.9	9.1	13.1	11.9	3.9	8.38	35.011	−0.554	34.462
	11	Moon N.	. .	3	III–VII	31 35 3.5	4.9	5.2	9.7	8.8	2.1	5.70	29.834	−0.254	29.575
	12	27 Canis Majoris . .	. .	3	III–VII	85 0 3.5	5.7	6.9	10.8	9.7	2.0	6.43	31.279	−0.554	30.730
	13	Nadir	. .	.	. .	200 0 4.5	6.7	6.9	11.9	8.2	3.9	7.02	30.628	. .	. .
Feb. 4	14	Weisse (2) II, 915 .	7.0	3	III–VII	23 25 5.2	8.3	8.1	12.8	9.8	1.4	7.60	28.369	−0.611	27.751
	15	O. Arg. N. 15259, S.P.	8.2	3	IV–VI	306 15 4.6	5.7	5.9	10.2	7.2	0.0	5.60	28.282	. .	27.678
	16	B. A. C. 5140, S. P. .	. .	1	V	326 35 3.7	6.9	7.9	10.6	9.4	59.4	6.32	26.137	. .	25.526
	17	Weisse (2) III, 669 .	8.0	3	III–VII	20 10 4.2	7.1	7.9	11.9	9.1	59.1	6.55	28.875	. .	28.256
	18	Anon. $3^h\ 41^m\ 45^s$.	. .	2	VII, IX	35 20 2.2	7.5	6.8	11.8	7.7	59.8	5.97	24.001	. .	23.374
	19	B. A. C. 1211 . .	. .	3	IV½–V½	338 35 6.9	9.5	12.1	15.0	10.5	2.0	9.33	33.992	. .	33.377
	20	B. A. C. 1247 . .	. .	3	I–5	335 25 5.6	8.4	10.2	14.0	10.2	1.1	8.25	31.482	. .	30.870
	21	51 Tauri	5.0	3	III–VII	37 35 4.0	8.0	8.7	13.9	9.8	0.8	7.53	26.918	. .	26.303
	22	η Ursæ Majoris, S. P. .	. .	3	IV–VI	315 0 1.5	3.2	4.6	6.9	5.7	57.0	3.15	34.331	. .	33.732
	23	B. A. C. 1471 . .	6.5	3	III–VII	86 40 4 8	10.4	10.2	17.0	9.9	2.8	9.18	30.607	. .	30.001
	24	Weisse IV, 957 . .	5.5	3	III–VII	44 50 6.1	11.1	9.8	16.6	10.7	2.9	9.53	29.413	. .	28.800
	25	Anon. $4^h\ 52^m\ 9^s$.	8.2	3	IV–VI	358 40 4.0	10.2	11.2	17.0	10.5	1.6	9.08	31.599	. .	30.983
	26	O. Arg. S. 3670 . .	. .	1	V	87 35 5.8	9.8	9.0	16.0	10.3	2.1	8.83	30.804	. .	30.193
	27	Lacaille 1780 . .	7.5	3	IV, VII, IX	95 40 2.9	7.9	8.2	12.9	9.0	0.1	6.83	35.391	. .	34.794
	28	Anon. $5^h\ 19^m\ 26^s$.	8.8	3	V–IX	19 49 58.8	63.6	62.2	66.7	63.1	53.5	61.32	32.887	. .	32.257
	29	B. A. C. 1786 . .	. .	2	I, IX	87 35 4.6	8.3	8.0	14.5	9.7	1.5	7.77	33.900	. .	33.314
	30	B. A. C. 1787 . .	. .	3	III–VII	" " "	"	"	"	"	"	"	26.465	. .	25.859
	31	B. A. C. 1851 . .	7.0	3	III–VII	49 5 0.0	5.1	4.7	10.6	5.8	58.5	4.12	34.173	. .	33.560
	32	Anon. $5^h\ 53^m\ 9^s$.	7.5	3	IV–VI	90 50 2.1	7.1	5.9	10.7	5.9	57.4	4.85	36.759	. .	36.150
	33	Nadir	. .	.	. .	200 0 0.0	4.7	4.1	11.9	4.2	58.2	3.85	30.586	. .	. .
10	34	B. A. C. 5140, S. P. .	. .	3	I–5	326 35 0.5	3.3	4.0	4.3	6.8	57.3	2.70	26.012	−0.516	25.499
	35	Nadir	. .	.	. .	200 0 1.7	4.3	3.3	9.8	5.5	0.0	4.10	30.500	. .	. .
	36	o^8 Eridani	. .	3	III–VII	66 45 3.7	4.7	6.7	9.7	7.9	0.2	5.48	33.173	. .	32.658
	37	Anon. $4^h\ 18^m\ 0^s$.	7.5	3	III–VII	84 35 4.5	7.6	9.9	12.8	11.1	2.4	8.05	35.559	. .	35.048
	38	B. A. C. 1399 . .	. .	3	IV½–V½	338 30 3.6	6.2	8.0	9.2	9.8	58.8	5.93	31.266	. .	30.746
	39	Weisse IV, 925 . .	8.0	3	III–VII	57 35 oblit.	9.4	8.4	13.0	12.8	4.4	8.99	32.073	. .	31.557
	40	Lacaille 1673. . .	7.8	3	III–VII	87 30 3.8	7.2	5.7	11.2	9.9	1.3	6.52	31.895	. .	31.384
	41	Anon. $5^h\ 7^m\ 41^s$.	7.5	3	III–VII	28 35 2.7	4.8	4.8	9.9	7.6	0.8	5.10	35.911	. .	35.389
	42	Weisse (2) V, 430 .	7.5	3	III–VII	21 0 1.8	4.5	4.7	9.2	7.2	59.2	4.43	34.946	. .	34.423
	43	B. A. C. 1786 . .	6.5	2	I, IX	87 35 1.5	5.7	3.1	9.2	6.2	58.0	3.62	33.522	. .	33.033
	44	B. A. C. 1787 . .	. .	3	III–VII	" " "	"	"	"	"	"	"	26.114	. .	25.603
	45	B. A. C. 1851 . .	6.0	3	III–VII	49 5 4.8	9.9	9.5	15.2	12.2	4.2	9.30	34.255	. .	33.737
	46	Anon. $5^h\ 50^m\ 48^s$.	5.0	3	III–VII	88 50 3.2	7.5	5.1	11.0	8.0	1.2	6.00	29.871	. .	29.360
	47	B. A. C. 1947 . .	5.5	3	III–VII	20 45 3.7	7.7	7.8	11.9	8.9	1.0	6.83	25.245	. .	24.721
	48	40 Draconis, S. P. . .	. .	2	IV½, V½	318 55 2.7	5.4	5.2	9.3	7.6	0.0	5.03	32.544	. .	32.034
	49	41 Draconis, S. P. . .	. .	2	V, VI	" " "	"	"	"	"	"	"	32.179	. .	31.676
	50	B. A. C. 2110 . .	5.5	3	III–VII	26 20 4.1	10.1	8.8	12.9	8.4	0.2	7.42	29.104	. .	28.582
	51	Weisse (2) VI, 1044 .	6.0	3	III–VII	22 40 4.5	9.8	7.0	12.8	9.4	0.8	7.38	31.564	. .	31.041
	52	Anon. $6^h\ 46^m\ 9^s$.	9.0	3	IV–VI	87 25 1.2	4.8	2.7	9.1	5.2	58.0	3.50	27.851	. .	27.337
	53	Lacaille 2558. . .	8.0	3	III–VII	86 35 2.7	7.7	6.9	12.8	7.2	0.3	6.27	31.647	. .	31.136
	54	Weisse (2) VII, 327 .	8.0	3	III–VII	36 39 59.3	63.2	61.3	67.6	63.8	55.9	61.85	34.166	. .	33.646
	55	Anon. $7^h\ 19^m\ 53^s$.	8.0	2	II, VIII	90 24 59.8	65.2	62.9	68.2	63.7	55.5	62.55	34.310	. .	33.712
	56	B. A. C. 2461 . .	6.0	1	V	" " "	"	"	"	"	"	"	31.321	. .	30.805
	57	Nadir	. .	.	. .	200 0 0.5	4.2	3.8	10.2	3.2	57.0	3.15	30.469	. .	. .
16	58	18 Ursæ Minoris, S. P.	. .	1	V	319 15 3.4	0.7	5.2	2.2	6.5	58.3	2.77	25.897	−0.598	25.299
	59	B. A. C. 1211 . .	. .	3	IV½–V½	338 35 4.0	1.1	5.7	5.3	7.3	59.0	3.73	33.924	. .	33.322
	60	Lalande 1370. . .	. .	3	III–VII	84 15 4.7	2.9	6.1	7.6	8.7	2.2	5.37	32.142	. .	31.519
	61	51 Tauri	. .	3	III–VII	37 35 2.8	0.8	3.8	5.0	7.2	0.5	3.35	26.684	. .	26.082
	62	84 Tauri	. .	3	III–VII	44 5 3.9	1.6	3.9	5.2	6.7	0.9	3.70	34.013	. .	33.412
	63	B. A. C. 1450 . .	7.0	3	III–VII	83 35 5.9	4.0	5.9	8.7	8.7	3.2	6.07	29.494	. .	28.900
	64	Weisse IV, 925 . .	8.3	3	III–VII	57 35 oblit.	3.9	5.9	7.8	9.4	4.4	6.22	31.982	−0.598	31.384

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1874.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	+ 3 13.7	S. 0 48 16.0	0.8	+ 33 5 22.0	− 11.0	Y.	
2	. .	. .	. .	+ 35.3	0 45 37.6	0.8	+ 38 8 0.4	− 11.1	Y.	
3	30.120	44.2	38.3	+ 5.5	64 50 12.8	2 6.9	− 25 58 40.9	+ 3.5	Y.	
4	. .	. .	. .	− 3 10.2	70 46 58.0	2 50.4	− 31 56 9.6	+ 4.2	Y.	
5	. .	. .	. .	+ 1 21.9	19 41 22.9	21.4	+ 19 11 54.5	− 5.9	Y.	
6	. .	. .	. .	− 16.2	68 24 48.7	2 30.3	− 29 33 40.2	+ 2.9	Y.	
7	30.114	44.0	38.5	+ 2 48.8	68 27 53.7	2 30.7	− 29 36 45.6	+ 2.9	Y.	
8	. .	. .	. .	− 48.4	21 59 20.5	24.2	+ 16 53 54.1	− 5.1	Y.	
9	. .	. .	. .	− 3 1.1	69 12 5.9	2 36.5	− 30 21 3.6	+ 2.1	Y.	
10	. .	. .	. .	− 2 19.8	66 2 48.5	2 14.1	− 27 11 23.8	+ 1.4	Y.	
11	30.110	43.5	38.4	+ 13.3	11 35 19.0	4 26.7	+ 27 13 53.1	. .	Y.	North wire.
12	. .	. .	. .	− 22.9	64 59 43.6	2 7.8	− 26 8 12.6	+ 0.4	Y.	
13	. .	. .	. .	. .		. .		. .	Y.	
14	30.242	34.8	30.8	+ 1 10.5	S. 3 26 18.1	3.7	+ 35 27 17.0	− 9.6	Y.	
15	. .	. .	. .	+ 1 12.8	N. 73 43 41.6	3 27.3	+ 67 19 12.3	+ 24.2	Y.	
16	30.244	34.2	30.2	+ 2 20.2	N. 53 22 33.5	1 22.2	+ 87 42 25.5	+ 23.8	Y.	
17	. .	. .	. .	+ 54.7	S. 0 11 1.2	0.2	+ 38 42 37.4	− 12.0	Y.	
18	. .	. .	. .	+ 3 27.6	S. 15 23 33.6	16.9	+ 23 29 48.3	− 6.9	Y.	
19	. .	. .	. .	− 1 45.9	N. 41 26 36.5	54.1	+ 80 21 9.4	− 22.6	Y.	
20	30.266	33.8	29.3	− 27.2	N. 44 35 19.0	1 0.4	+ 83 29 58.2	− 23.1	Y.	
21	. .	. .	. .	+ 1 55.9	S. 17 37 3.4	19.5	+ 21 16 15.9	− 6.6	Y.	
22	30.260	32.2	28.5	− 1 57.0	N. 65 1 53.8	2 11.3	+ 76 2 16.1	+ 24.6	Y.	
23	. .	. .	. .	− 0.0	S. 66 40 9.2	2 21.8	− 27 48 52.2	+ 7.5	Y.	
24	. .	. .	. .	+ 37.6	S 24 50 47.1	29.1	+ 14 2 22.6	− 4.5	Y.	
25	. .	. .	. .	− 30.8	N. 21 20 21.7	24.0	+ 60 14 24.5	− 18.0	Y.	Larger star, nearly following.
26	. .	. .	. .	− 6.1	S. 67 35 2.8	2 28.3	− 28 43 52.3	+ 6.9	Y.	
27	30.274	33.2	27.7	− 2 30.2	S. 75 37 36.6	3 56.5	− 36 47 54.3	+ 8.0	Y.	
28	. .	. .	. .	− 1 10.7	N. 0 11 9.4	0.2	+ 39 4 48.4	− 11.9	Y.	
29	. .	. .	. .	− 1 43.9	S. 67 33 23.9	2 28.2	− 28 42 13.3	+ 5.7	Y.	
30	. .	. .	. .	+ 2 9.8	67 37 17.6	2 28.7	− 28 46 7.5	+ 5.7	Y.	
31	. .	. .	. .	− 1 51.6	29 3 12.5	34.3	+ 9 49 52.0	− 3.5	Y.	
32	30.286	33.5	27.0	− 3 12.8	S. 70 46 52.1	2 55.4	− 31 56 8.7	+ 5.5	Y.	
33	. .	. .	. .	. .		. .		. .	Y.	
34	29.830	37.5	30.4	+ 2 21.1	N. 53 22 36.2	1 21.0	+ 87 42 24.0	+ 24.2	Y.	
35	. .	. .	. .	. .		. .		. .	Y.	
36	29.820	37.0	31.3	− 1 23.3	S. 46 43 42.2	1 3.9	− 7 51 7.3	+ 3.2	Y.	
37	. .	. .	. .	− 2 38.2	S. 64 32 29.8	2 5.9	− 25 40 56.9	+ 8.0	Y.	
38	29.810	36.5	30.4	− 23.4	N. 41 30 17.4	53.3	+ 80 24 49.5	− 23.3	Y.	
39	. .	. .	. .	− 48.8	S. 37 34 20.2	46.4	+ 1 18 32.2	− 0.4	Y.	− 0″.66 applied to mean of C, D, E, and F.
40	. .	. .	. .	− 43.4	67 29 23.2	2 24.7	− 28 38 9.1	+ 7.6	Y.	
41	. .	. .	. .	− 2 48.9	8 32 16.2	9.1	+ 30 21 13.5	− 9.9	Y.	
42	. .	. .	. .	− 2 18.6	0 57 45.8	1.0	+ 37 55 52.0	− 12.2	Y.	
43	. .	. .	. .	− 1 35.1	67 33 28.6	2 25.6	− 28 42 15.4	+ 6.4	Y.	
44	29.792	35.0	28.2	+ 2 17.8	67 37 21.4	2 25.6	− 28 46 8.2	+ 6.4	Y.	
45	. .	. .	. .	− 1 57.1	29 3 12.2	33.6	+ 9 49 53.0	− 3.5	Y.	
46	. .	. .	. .	+ 20.1	68 50 26.1	2 35.4	− 29 59 22.7	+ 6.0	Y.	
47	. .	. .	. .	+ 2 45.4	S. 0 47 52.3	0.8	+ 38 5 45.7	− 11.4	Y.	
48	. .	. .	. .	− 1 3.8	N. 61 5 58.7	1 49.6	+ 79 58 32.9	+ 22.5	Y.	
49	29.776	33.5	26.7	− 52.5	N. 61 5 47.5	1 49.6	+ 79 58 44.1	+ 22.5	Y.	
50	. .	. .	. .	+ 44.4	S. 6 20 51.9	6.8	+ 32 32 40.1	− 9.2	Y.	
51	. .	. .	. .	− 32.6	2 39 34.8	2.8	+ 36 14 1.2	− 9.8	Y.	
52	. .	. .	. .	+ 1 23.5	67 26 27.0	2 25.8	− 28 35 14.0	+ 4.0	Y.	
53	29.780	32.4	24.5	− 35.6	66 34 30.7	2 20.0	− 27 43 11.9	+ 3.6	Y.	
54	. .	. .	. .	− 1 54.3	16 38 7.6	18.2	+ 22 15 13.0	− 5.3	Y.	
55	. .	. .	. .	− 1 55.3	70 23 6.2	2 49.8	− 31 32 17.2	+ 3.2	Y.	
56	. .	. .	24.2	− 25.2	S. 70 24 37.3	2 50.1	− 31 33 48.6	+ 3.2	Y.	
57	. .	. .	. .	. .		. .		. .	Y.	
58	. .	. .	. .	+ 2 27.3	N. 60 42 29.9	1 42.5	+ 80 21 8.8	+ 25.5	Y.	
59	29.740	52.0	50.7	− 1 44.1	N. 41 26 40.4	50.9	+ 80 21 10.1	− 23.3	Y.	
60	. .	. .	. .	− 48.6	S. 64 14 16.8	1 59.1	− 25 22 37.1	+ 8.7	Y.	
61	. .	. .	. .	+ 2 2.8	17 37 6.1	18.4	+ 21 16 14.3	− 6.4	Y.	
62	. .	. .	. .	− 1. 47.0	24 3 16.7	25.8	+ 14 49 56.3	− 4.3	Y.	
63	29.774	51.3	48.2	+ 34.5	63 35 40.5	1 56.4	− 24 43 58.1	+ 7.8	Y.	
64	. .	. .	. .	− 43.4	S. 37 34 22.8	44.7	+ 1 18 31.3	0.0	Y.	− 0″.66 applied to mean of C, D, E, and F.

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
1874.						° ′ ″	″	″	″	″	″	″	r.	r.	r.
Feb. 16	1	Anon. $4^h\ 44^m\ 43^s$.	7.8	3	III–VII	57 35 oblit.	3.9	5.9	7.8	9.4	4.4	6.22	30.562	−0.598	29.964
	2	Lacaille 1673. . .	. .	3	III–VII	87 30 5.5	3.9	6.0	8.3	8.5	3.4	5.93	31.850	. .	31.257
	3	O. Arg. S. 3670 . .	. .	3	V–IX	87 35 3.7	1.2	4.1	6.8	6.8	1.8	4.07	30.193	. .	29.605
	4	Lacaille 1780. . .	7.0	3	III–VII	95 40 1.3	2.2	4.1	5.7	6.2	0.0	3.25	34.805	. .	34.214
	5	δ Orionis	8.3	2	III, VII	64 20 4.2	3.4	5.3	7.8	6.5	0.5	4.62	28.998	. .	28.401
	6	Anon. $5^h\ 37^m\ 39^s$.	. .	3	III–VII	20 45 1.5	1.5	3.7	4.7	6.1	59.8	2.88	24.581	. .	23.975
	7	Anon. $5^h\ 38^m\ 58^s$.	. .	3	V–IX	" " "	"	"	"	"	"	"	28.422	. .	27.806
	8	Anon. $5^h\ 50^m\ 48^s$.	. .	3	III–VII	88 50 3.9	4.2	4.3	7.3	7.2	1.6	4.75	35.247	. .	34.655
	9	Anon. $5^h\ 50^m\ 50^s$.	. .	2	I, IX	" " "	"	"	"	"	"	"	29.701	. .	29.131
	10	Anon. $6^h\ 3^m\ 57^s$.	8.5	2	I, IX	27 25 3.4	4.8	5.8	7.8	7.7	1.2	5.12	28.167	. .	27.539
	11	Anon. $6^h\ 4^m\ 6^s$.	8.2	2	V, VI	" " "	"	"	"	"	"	"	26.754	. .	26.151
	12	Anon. $6^h\ 15^m\ 27^s$.	7.5	3	V–IX	88 25 2.8	2.8	2.7	4.7	4.8	0.1	2.98	30.784	. .	30.196
	13	B. A. C. 2110 . .	5.0	3	III–VII	26 20 2.8	3.7	4.2	7.8	5.4	59.5	3.90	29.054	. .	28.450
	14	Lacaille 2388 . .	5.5	3	V–IX	89 15 3.8	4.5	5.2	8.1	6.2	1.9	4.95	36.112	. .	35.524
	15	O. Arg. S. 5745 . .	. .	3	III–VII	87 20 4.9	3.7	5.8	8.9	6.8	2.1	5.37	26.943	. .	26.350
	16	Anon. $6^h\ 51^m\ 45^s$.	7.8	3	III–VII	83 40 5.0	5.2	7.6	10.4	8.2	2.3	6.45	30.801	. .	30.207
	17	17 Lyncis (1st *) . .	7.2	2	IV, V	357 55 7.3	9.2	11.8	14.1	12.7	4.8	9.98	31.714	. .	31.112
	18	17 Lyncis (2d *) . .	8.0	1	VI	" " "	"	"	"	"	"	"	26.259	. .	25.653
	19	O. Arg. S. 6553 . .	. .	2	I, IX	89 30 4.2	6.2	5.8	9.1	7.8	2.2	5.88	27.943	. .	27.374
	20	O. Arg. S. 6554 . .	. .	3	IV–VI	" " "	"	"	"	"	"	"	26.764	. .	26.168
	21	Anon. $7^h\ 24^m\ 30^s$.	. .	3	III–VII	79 25 5.1	6.8	8.4	11.4	10.3	3.7	7.62	32.360	. .	31.766
	22	Anon. $7^h\ 43^m\ 1^s$.	9.5	1	V	82 20 5.2	6.0	6.7	11.0	8.4	2.0	6.55	29.560	. .	28.962
	23	B. A. C. 2655 . .	5.5	3	III–VII	88 50 4.7	5.3	5.8	9.2	7.4	1.9	5.72	28.878	. .	28.286
	24	Nadir	. .	.	. .	200 0 0.5	2.3	3.1	8.0	3.2	0.1	2.87	30.537	. .	. .
18	25	Anon. $4^h\ 18^m\ 7^s$.	7.5	3	III–VII	84 35 4.1	8.8	10.1	17.0	8.8	10.9	8.28	35.698	−0.573	35.130
	26	Anon. $4^h\ 35^m\ 28^s$.	8.5	3	V–IX	84 50 0.9	3.9	5.6	11.9	5.1	56.9	4.05	25.351	. .	24.788
	27	Weisse IV, 925 . .	8.2	3	III–VII	57 35 oblit.	2.9	1.2	8.3	2.3	54.5	0.34	31.871	. .	31.298
	28	Anon. $4^h\ 56^m\ 35^s$.	8.0	2	V, VII	90 25 2.1	7.1	5.7	11.9	4.7	57.0	4.75	29.372	. .	28.803
	29	Anon. $4^h\ 56^m\ 47^s$.	8.5	1	IX	" " "	"	"	"	"	"	"	28.081	. .	27.538
	30	Lacaille 1738. . .	6.5	3	V–IX	84 55 7.2	12.2	13.1	20.8	12.1	5.0	11.73	29.538	. .	28.975
	31	Weisse (2) V, 431 .	7.5	3	III–VII	21 0 3.0	7.2	7.9	15.3	7.5	58.7	6.60	35.029	. .	34.449
	32	Groombridge 990 .	8.0	2	IV, VI	7 30 4.5	11.1	10.3	17.8	8.3	0.1	8.68	27.080	. .	26.501
	33	Anon. $5^h\ 35^m\ 27^s$.	8.7	2	V, IX	20 45 4.3	8.4	10.5	15.2	7.9	0.0	7.72	36.245	. .	35.653
	34	Anon. $5^h\ 50^m\ 48^s$.	. .	1	V	88 50 8.9	14.7	12.8	20.6	12.9	6.8	12.78	35.702	. .	35.129
	35	Anon. $5^h\ 50^m\ 49^s$.	. .	2	VII, IX	" " "	"	"	"	"	"	"	30.158	. .	29.603
	36	Lacaille 3130. . .	6.5	3	III–VII	88 35 5.7	9.8	10.2	15.3	9.1	1.3	8.57	29.042	. .	28.474
	37	Lalande 11959 . .	7.5	3	III–VII	20 25 4.4	8.2	9.8	15.0	8.7	0.1	7.70	31.882	. .	31.301
	38	Anon. $6^h\ 22^m\ 27^s$.	9.0	3	III–VII	84 40 4.3	9.8	12.0	17.4	10.1	3.1	9.45	35.955	. .	35.387
	39	Anon. $6^h\ 24^m\ 3^s$.	8.0	3	V–IX	" " "	"	"	"	"	"	"	31.187	. .	30.624
	40	O. Arg. S. 5199 . .	8.5	2	VII, IX	" " "	"	"	"	"	"	"	31.056	. .	30.498
	41	Weisse (2) VI, 1044.	6.5	2	I, IX	22 40 7.1	12.2	12.6	18.1	10.6	3.6	10.70	31.766	. .	31.157
	42	Anon. $6^h\ 35^m\ 46^s$.	8.5	1	V	" " "	"	"	"	"	"	"	37.054	. .	36.481
	43	Anon. $6^h\ 47^m\ 0^s$. .	. .	2	IV, V	87 25 2.8	8.4	7.7	15.9	7.5	0.0	7.05	29.990	. .	29.418
	44	Anon. $6^h\ 47^m\ 9^s$. .	. .	1	IX	" " "	"	"	"	"	"	"	28.202	. .	27.655
	45	Anon. $6^h\ 54^m\ 1^s$.	9.5	1	V	85 5 0.7	5.2	6.7	13.2	5.7	57.8	4.88	31.107	. .	30.534
	46	O. Arg. S. 6554 . .	. .	2	II, VIII	89 30 4.1	10.2	8.8	15.3	7.7	0.7	7.80	27.197	. .	26.641
	47	O. Arg. S. 6553 . .	. .	3	IV–VI	" " "	"	"	"	"	"	"	28.035	. .	27.464
	48	Weisse (2) VII, 667 .	. .	3	III–VII	43 20 6.2	10.3	10.2	18.5	8.6	oblit.	9.49	26.417	. .	25.841
	49	o Geminorum . . .	5.0	3	V–IX	24 0 5.7	10.8	11.8	18.1	8.9	1.2	9.42	28.590	. .	28.002
	50	O. Arg. S. 7442 . .	9.0	3	III–VII	82 45 4.6	8.6	8.6	16.1	7.1	59.4	7.40	32.071	. .	31.502
	51	Anon. $7^h\ 51^m\ 10^s$.	8.5	2	IV, VI	89 25 6.4	12.1	10.8	18.0	10.2	2.7	10.03	29.696	. .	29.126
	52	Anon. $7^h\ 51^m\ 28^s$.	8.5	1	IX	" " "	"	"	"	"	"	"	34.700	. .	34.156
	53	O. Arg. S. 8108 . .	7.0	3	III–VII	88 50 6.8	12.4	10.9	18.5	10.8	3.3	10.45	34.083	. .	33.516
	54	Nadir	. .	.	. .	200 0 3.1	9.2	7.8	17.7	6.2	2.2	7.70	30.668	. .	. .
20	55	51 Cephei	. .	3	I–5	331 40 7.0	5.4	9.1	5.6	14.1	8.2	8.23	30.416	−0.566	29.847
	56	λ Geminorum . . .	. .	3	III–VII	42 5 4.7	2.7	2.1	3.2	10.1	7.8	5.10	26.404	. .	25.835
	57	Weisse (2) VII, 667 .	8.2	3	III–VII	43 20 6.4	5.2	4.0	5.5	10.2	9.8	6.85	26.251	. .	25.682
	58	o Geminorum . . .	5.5	3	III–VII	24 0 4.2	1.9	1.3	1.5	8.5	6.0	3.90	28.403	. .	27.830
	59	Anon. $7^h\ 45^m\ 51^s$.	9.0	3	III–VII	58 25 5.1	4.2	3.8	5.9	12.2	11.0	7.03	28.678	. .	28.112
	60	O. Arg. S. 7797 . .	8.0	2	I, IX	88 55 8.7	6.6	5.8	6.9	12.4	11.6	8.67	30.015	. .	29.477
	61	O. Arg. S. 7788 . .	7.8	3	III–VII	" " "	"	"	"	"	"	"	34.289	. .	33.728
	62	ζ Cancri (1st *) . .	. .	2	I, IX	40 50 0.3	57.8	58.1	57.8	4.8	4.0	0.47	27.358	. .	26.776
	63	ζ Cancri (2d *) . .	. .	3	III–VII	" " "	"	"	"	"	"	"	27.205	. .	26.636
	64	w Puppis	. .	3	IV–VI	91 30 5.8	5.1	4.9	4.9	10.9	8.0	6.60	30.410	−0.566	29.846

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1874.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	+ 1.1	S. 37 35 7.3	44.7	+ 1 17 46.8	0.0	Y.	−0″.66 applied to mean of C, D, E, and F.
2	29.774	51.0	47.0	− 39.4	67 29 26.6	2 19.5	− 28 38 7.3	+ 8.2	Y.	
3	. .	. .	. .	+ 12.4	67 35 16.4	2 20.2	− 28 43 57.8	+ 8.0	Y.	
4	29.768	50.2	46.3	− 2 12.1	75 37 51.2	3 43.5	− 36 47 55.9	+ 9.4	Y.	
5	. .	. .	. .	+ 50.1	44 20 54.7	57.0	− 5 28 12.9	+ 1.5	Y.	North star of four.
6	. .	. .	. .	+ 3 8.8	0 48 11.7	0.8	+ 38 5 26.3	− 12.1	Y.	
7	. .	. .	. .	+ 1 8.7	0 46 11.6	0.8	+ 38 7 26.4	− 12.1	Y.	
8	29.794	49.4	45.1	− 2 25.9	68 47 38.9	2 29.5	− 29 56 29.6	+ 6.9	Y.	
9	. .	. .	. .	+ 27.2	68 50 32.0	2 29.9	− 29 59 23.1	+ 6.9	Y.	
10	. .	. .	. .	+ 1 17.2	7 26 22.3	7.6	+ 31 27 8.9	− 9.6	Y.	
11	. .	. .	. .	+ 2 0.6	7 27 5.7	7.6	+ 31 26 25.5	− 9.6	Y.	
12	. .	. .	. .	− 6.1	68 24 56.8	2 27.1	− 29 33 45.1	+ 6.2	Y.	
13	. .	. .	. .	+ 48.6	6 20 52.5	6.5	+ 32 32 39.8	− 9.5	Y.	
14	29.812	48.3	43.2	− 2 53.1	69 12 11.8	2 33.4	− 30 21 6.4	+ 5.7	Y.	
15	. .	. .	. .	+ 1 54.4	67 21 59.8	2 20.0	− 28 30 41.0	+ 5.2	Y.	
16	. .	. .	. .	− 6.5	S. 63 40 0.0	1 58.2	− 24 48 19.4	+ 4.4	Y.	
17	. .	. .	. .	− 34.8	N. 22 5 24.9	23.9	+ 60 59 27.6	− 15.1	Y.	
18	. .	. .	. .	+ 2 16.2	N. 22 2 33.8	23.8	+ 60 56 36.4	− 15.1	Y.	
19	. .	. .	. .	+ 1 22.3	S. 69 31 28.2	2 36.5	− 30 40 25.9	+ 4.7	Y.	
20	. .	. .	. .	+ 2 0.1	69 32 6.0	2 36.6	− 30 41 3.8	+ 4.7	Y.	
21	29.810	47.2	41.3	− 55.3	59 24 12.3	1 39.4	− 20 32 12.9	+ 3.1	Y.	
22	. .	. .	. .	+ 32.5	62 20 39.1	1 52.3	− 23 28 52.6	+ 3.1	Y.	
23	29.824	46.2	39.6	+ 53.8	68 50 59.5	2 31.8	− 29 59 52.5	+ 3.5	Y.	
24	. .	. .	. .	. .		. .		. .	Y.	
25	30.232	35.5	29.8	− 2 40.8	64 32 27.5	2 8.0	− 25 40 56.7	+ 8.5	Y.	
26	. .	. .	. .	+ 2 43.3	64 52 47.4	2 10.0	− 26 1 18.6	+ 8.2	Y.	
27	30.228	35.0	29.2	− 40.7	37 34 19.6	47.1	+ 1 18 32.1	+ 0.1	Y.	−0″.71 applied to mean of C, D, E, and F.
28	. .	. .	. .	+ 37.5	70 25 42.2	2 51.0	− 31 34 54.4	+ 9.0	Y.	
29	. .	. .	. .	+ 1 17.2	70 26 21.9	2 51.5	− 31 35 34.6	+ 9.0	Y.	
30	. .	. .	29.0	+ 32.1	64 55 43.8	2 10.5	− 26 4 15.5	+ 7.5	Y.	
31	. .	. .	. .	− 2 19.4	S. 0 57 47.2	1.0	+ 37 55 50.6	− 12.4	Y.	
32	. .	. .	. .	+ 1 49.7	N. 12 28 1.6	13.6	+ 51 21 54.0	− 16.3	Y.	
33	. .	. .	. .	− 2 57.2	S. 0 42 10.5	0.8	+ 38 11 27.5	− 12.3	Y.	
34	. .	. .	. .	− 2 40.8	68 47 32.0	2 37.1	− 29 56 30.3	+ 7.2	Y.	
35	30.236	34.0	28.5	+ 12.4	68 50 25.2	2 37.5	− 29 59 23.9	+ 7.2	Y.	
36	. .	. .	. .	+ 47.8	68 35 56.4	2 35.7	− 29 44 53.3	+ 6.9	Y.	
37	. .	. .	. .	− 40.8	0 24 26.9	0.4	+ 38 29 11.5	− 11.6	Y.	
38	. .	. .	. .	− 2 48.8	64 37 20.6	2 8.9	− 25 45 50.7	+ 5.6	Y.	
39	. .	. .	. .	− 19.6	64 39 49.9	2 9.1	− 25 48 20.2	+ 5.6	Y.	
40	30.246	34.0	28.5	− 15.6	64 39 53.9	2 9.1	− 25 48 24.2	+ 5.6	Y.	
41	. .	. .	. .	− 36.2	2 39 34.5	2.9	+ 36 14 1.4	− 10.3	Y.	
42	. .	. .	. .	− 3 23.1	2 36 47.6	2.8	+ 36 16 48.4	− 10.3	Y.	
43	. .	. .	. .	+ 18.2	67 25 25.3	2 26.9	− 28 34 13.4	+ 5.5	Y.	
44	. .	. .	. .	+ 1 13.5	67 26 20.6	2 27.0	− 28 35 8.8	+ 5.5	Y.	
45	. .	. .	. .	− 16.7	65 4 48.2	2 11.7	− 26 13 21.1	+ 4.9	Y.	
46	. .	. .	. .	+ 1 45.3	69 31 53.1	2 43.6	− 30 40 57.9	+ 5.1	Y.	
47	30.238	33.2	27.5	+ 1 19.5	69 31 27.3	2 43.5	− 30 40 32.0	+ 5.1	Y.	
48	. .	. .	. .	+ 2 10.3	23 22 19.8	26.6	+ 15 30 52.4	− 3.5	Y.	−1″.81 applied to mean of B, C, D, and E.
49	. .	. .	. .	+ 1 2.6	4 1 12.0	4.3	+ 34 52 22.5	− 7.7	Y.	
50	. .	. .	. .	− 47.1	62 44 20.3	1 59.0	− 23 52 40.5	+ 3.6	Y.	
51	30.226	33.0	27.5	+ 27.4	69 25 37.4	2 42.6	− 30 34 41.2	+ 4.1	Y.	
52	. .	. .	. .	− 2 10.3	69 22 59.8	2 42.3	− 30 32 3.3	+ 4.1	Y.	
53	. .	. .	. .	− 1 50.2	S. 68 48 20.2	2 37.5	− 29 57 18.9	+ 3.7	Y.	
54	. .	. .	. .	. .		. .		. .	Y.	
55	29.990	56.8	57.8	+ 4.8	N. 48 19 47.0	1 4.4	+ 87 14 30.2	− 21.7	Y.	Adjusted microscope F slightly.
56	. .	. .	57.8	+ 2 10.5	S. 22 7 15.6	23.3	+ 16 45 59.9	− 4.1	Y.	
57	. .	. .	. .	+ 2 15.3	23 22 22.2	24.8	+ 15 30 51.8	− 3.5	Y.	
58	. .	. .	. .	+ 1 8.0	4 1 11.9	4.0	+ 34 52 22.9	− 7.9	Y.	
59	30.014	57.8	56.3	+ 59.2	38 26 6.2	45.7	+ 0 26 46.9	+ 0.1	Y.	
60	. .	. .	. .	+ 16.4	68 55 25.0	2 28.2	− 30 4 14.4	+ 4.3	Y.	
61	. .	. .	. .	− 1 56.8	68 53 11.8	2 27.9	− 30 2 0.9	+ 4.3	Y.	
62	. .	. .	. .	+ 1 41.1	20 51 41.5	21.9	+ 18 1 35.4	− 2.8	Y.	
63	. .	. .	. .	+ 1 45.4	20 51 45.9	21.9	+ 18 1 31.0	− 2.8	Y.	
64	30.000	57.8	56.1	+ 4.8	S. 71 30 11.4	2 50.3	− 32 39 22.9	+ 4.0	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No of mic. readings.	Transit Wires.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
1874.						° ′ ″	″	″	″	″	″	″	r.	r.	r.
Feb. 20	1	η Cancri	. .	3	III–VII	38 0 4.6	2.2	3.6	2.7	10.6	7.9	5.27	28.357	−0.566	27.787
	2	Nadir	. .	.	. .	200 0 4.4	1.2	2.8	3.9	7.2	8.5	4.67	30.564	. .	. .
26	3	B. A. C. 5705, S. P. .	. .	3	IV–VI	316 40 5.3	6.3	9.2	11.4	7.4	1.7	6.88	32.748	−0.627	32.134
	4	O. Arg. S. 3629 . .	8.0	3	III–VII	86 40 2.2	5.4	14.8	7.0	5.2	0.0	5.77	27.540	. .	26.918
	5	Anon. $5^h\ 8^m\ 42^s$. .	8.3	3	III–VII	28 40 5.1	7.2	9.1	14.8	7.8	1.0	7.50	32.407	. .	31.774
	6	O. Arg. S. 3917 . .	9.0	2	IV, VI	75 0 1.2	3.2	7.1	11.7	4.4	57.4	4.17	24.849	. .	24.221
	7	Rumker 1473 . .	8.5	3	III–VII	37 45 3.2	6.3	8.6	13.9	6.4	0.4	6.47	28.798	. .	28.167
	8	Σ Cat. Gen. 599 . .	9.0	2	VII, IX	" " "	"	"	"	"	"	"	26.943	. .	26.304
	9	Weisse V, 1045 . .	8.0	3	III–VII	72 25 4.4	9.0	9.8	16.1	7.8	1.9	8.17	27.611	. .	26.986
	10	B. A. C. 1947 . .	6.0	3	V–IX	20 45 1.8	4.9	7.6	12.5	4.8	58.4	5.00	25.257	. .	24.614
	11	Lalande 11959 . .	7.0	3	III–VII	20 25 3.5	6.8	8.2	15.0	6.8	59.2	6.58	31.939	. .	31.304
	12	Lacaille 2232 . .	7.0	3	V–IX	88 30 6.6	12.1	11.9	18.5	10.9	4.7	10.78	34.927	. .	34.312
	13	23 Geminorum . . .	6.0	3	III–VII	42 0 6.8	10.4	11.1	17.2	9.8	3.8	9.85	32.154	. .	31.524
	14	Weisse (2) VI, 1044 .	. .	1	V	22 39 58.8	63.0	62.9	68 2	61.9	54.2	61.50	31.471	. .	30.844
	15	Anon. $6^h\ 35^m\ 45^s$.	. .	1	IX	" " "	"	"	"	"	"	"	36.475	. .	35.813
	16	Anon. $6^h\ 47^m\ 0^s$. .	8.3	1	V	87 25 6.3	9.7	10.7	17.0	9.0	2.3	9.17	30.035	. .	29.408
	17	Anon. $6^h\ 47^m\ 10^s$.	9.0	2	VII, IX	" " "	"	"	"	"	"	"	28.046	. .	27.436
	18	Nadir	. .	.	. .	200 0 4.0	8.4	7.5	17.8	5.5	2.1	7.55	30.719	. .	. .
	19	Moon N.	. .	3	III–VII	32 20 5.2	7.3	8.7	15.1	6.6	2.1	7.50	27.292	. .	26.660
Mar. 2	20	B. A. C. 5705, S. P. .	. .	3	IV–VI	316 40 2.6	0.2	3.0	2.9	7.0	0.0	2.62	32.804	−0.605	32.212
	21	ι Tauri	. .	2	VII, IX	37 30 1.3	59.2	1.9	3.7	5.9	0.0	2.00	33.025	. .	32.408
	22	Lacaille 1738. . .	7.0	3	III–VII	84 55 6.0	3.6	7.6	9.2	9.9	6.0	7.05	29.178	. .	28.578
	23	Weisse (2) V, 287 .	8.5	3	V–IX	28 30 5.0	3.8	7.0	8.6	9.6	4.5	6.42	29.319	. .	28.702
	24	Anon $5^h\ 19^m\ 7^s$. .	8.6	1	V	19 50 6.8	7.1	9.0	10.3	12.2	4.6	8.33	30.791	. .	30.186
	25	Anon. $5^h\ 19^m\ 26^s$.	8.3	2	VII, IX	" " "	"	"	"	"	"	"	33.192	. .	32.561
	26	Anon. $5^h\ 27^m\ 46^s$.	. .	3	V–IX	64 35 5.8	5.8	7.2	9.2	10.7	5.0	7.28	31.952	. .	31.349
	27	Weisse V, 1045 . .	8.0	3	III–VII	72 25 5.1	5.8	6.2	9.0	10.8	4.7	6.93	27.443	. .	26.840
	28	Anon. $5^h\ 50^m\ 53^s$.	8.5	2	V	39 5 3.9	3.6	5.5	5.6	9.8	4.1	5.42	28.128	. .	27.523
	29	Anon. $5^h\ 52^m\ 2^s$. .	9.5	1	I, IX	" " "	"	"	"	"	"	"	26.609	. .	25.986
	30	Anon. $6^h\ 3^m\ 3^s$. .	9.5	2	V, IX	27 45 5.7	6.4	7.7	9.2	11.1	5.8	7.65	33.508	. .	32.888
	31	Anon. $6^h\ 15^m\ 26^s$.	7.5	3	III–VII	88 25 6.9	6.7	7.9	8.9	11.3	6.8	8.08	30.968	. .	30.368
	32	Lacaille 2232 . .	7.2	2	VII, IX	" " "	"	"	"	"	"	"	25.010	. .	24.423
	33	O. Arg. S. 5198 . .	8.0	2	III, VII	84 40 5.6	6.2	8.6	10.6	11.8	5.6	8.07	30.762	. .	30.164
	34	O. Arg. S. 5199 . .	8.5	2	V, IX	" " "	"	"	"	"	"	"	31.410	. .	30.817
	35	O. Arg. S. 5463 . .	8.2	3	III–VII	82 25 3.2	3.4	3.9	5.9	7.5	1.6	4.25	26.258	. .	25.657
	36	B. A. C. 2244 . .	7.5	2	V, VII	86 0 4.3	4.9	6.5	9.8	10.2	3.7	6.57	25.144	. .	24.543
	37	O. Arg. S. 5772 . .	9.0	1	IX	" " "	"	"	"	"	"	"	28.221	. .	27.641
	38	O. Arg. S. 6004 . .	8.0	3	V–IX	87 40 6.0	5.8	6.3	9.4	10.0	3.8	6.88	33.017	. .	32.423
	39	Anon. $7^h\ 2^m\ 39^s$. .	9.5	1	V	73 35 4.7	4.9	6.7	9.4	10.6	4.1	6.73	31.202	. .	30.597
	40	Anon. $7^h\ 3^m\ 17^s$. .	8.5	1	IX	" " "	"	"	"	"	"	"	25.639	. .	25.047
	41	Anon. $7^h\ 10^m\ 17^s$.	8.2	3	III–VII	82 20 3.7	4.9	4.1	7.4	8.6	2.7	5.23	28.571	. .	27.970
	42	Weisse VII, 461. .	8.5	3	V–IX	73 45 3.4	2.9	5.8	8.4	8.3	3.0	5.30	34.067	. .	33.468
	43	Anon. $7^h\ 24^m\ 30^s$.	8.5	3	III–VII	79 25 1.8	3.8	3.9	7.0	7.2	2.1	4.30	32.047	. .	31.446
	44	Anon. $7^h\ 25^m\ 1^s$. .	7.0	2	VII, IX	" " "	"	"	"	"	"	"	30.983	. .	30.390
	45	Anon. $7^h\ 34^m\ 37^s$.	8.3	3	III–VII	93 25 5.0	6.9	6.9	9.8	10.7	4.4	7.28	35.452	. .	34.854
	46	Anon. $7^h\ 35^m\ 24^s$.	9.0	2	VII, IX	" " "	"	"	"	"	"	"	38.358	. .	37.775
	47	Anon. $7^h\ 45^m\ 48^s$.	9.5	2	III, IX	58 25 3.3	4.7	5.5	8.1	10.7	5.1	6.23	31.836	. .	31.231
	48	Anon. $7^h\ 45^m\ 50^s$.	9.0	1	V	" " "	"	"	"	"	"	"	28.505	. .	27.900
	49	Weisse (2) VII, 1521	9.0	3	III–VII	30 45 5.7	5.7	6.2	8.1	11.1	5.4	7.03	31.458	. .	30.848
	50	ζ Cancri, (1st *) . .	. .	2	III, VII	40 50 6.8	7.6	7.5	11.0	12.6	8.9	9.07	27.535	. .	26.926
	51	ζ Cancri, (2d *) . .	. .	2	V, IX	" " "	"	"	"	"	"	"	27.702	. .	27.089
	52	Lalande 16367 . .	8.2	3	III–VII	31 25 4.8	4.0	5.8	9.0	10.4	4.2	6.37	33.314	. .	32.704
	53	Anon. $8^h\ 22^m\ 40^s$.	8.5	3	V–IX	93 30 1.8	2.6	1.8	5.8	6.2	0.5	3.12	36.025	. .	35.442
	54	Anon. $8^h\ 30^m\ 36^s$.	. .	3	IV–VI	51 45 4.7	4.5	6.1	9.4	9.8	4.7	6.53	32.797	. .	32.192
	55	Lalande 16960 . .	. .	2	I, IX	" " "	"	"	"	"	"	"	34.418	. .	33.807
	56	Dorpat 1270, (1st *) .	. .	2	V, IX	61 0 5.0	5.6	6.4	10.4	10.2	5.9	7.25	27.948	. .	27.344
	57	Dorpat 1270, (2d *) .	. .	2	III, VII	" " "	"	"	"	"	"	"	27.965	. .	27.360
	58	Lacaille 3574. . .	7.0	3	III–VII	90 55 4.5	5.6	6.7	9.4	8.8	4.1	6.52	34.510	. .	33.911
	59	Lacaille 3621. . .	7.0	3	III–VII	86 10 4.8	5.9	7.8	11.0	10.2	4.8	7.42	28.871	. .	28.271
	60	Anon. $9^h\ 0^m\ 33^s$. .	8.5	3	III–VII	37 24 56.7	59.1	59.2	61.1	63.2	57.4	59.45	35.589	. .	34.980
	61	Anon. $9^h\ 10^m\ 27^s$.	7.5	3	III–VII	86 35 3.8	3.6	4.8	10.2	8.5	3.1	5.67	35.922	. .	35.322
	62	Nadir	. .	.	. .	200 0 1.8	1.6	2.5	7.4	4.2	1.8	3.22	30.554	. .	. .
4	63	Lacaille 1738. . .	7.0	3	III–VII	84 55 5.8	4.1	7.8	8.8	10.8	6.4	7.28	29.169	−0.618	28.556
	64	Groombridge 980 .	7.0	3	III–VII	20 40 2.6	0.1	3.0	1.4	6.3	0.0	2.23	30.295	−0.618	29.669

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1874.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	′ ″		
1	. .	. .	. .	+ 1 9.3	S. 18 1 14.6	18.7	+ 20 52 5.5	— 2.5	Y.	
2	. .	. .	. .	. .		. .		. .	Y.	
3	30.200	40.5	31.0	— 1 6.9	N. 63 21 0.0	2 1.0	+ 77 43 20.2	+ 27.1	Y.	
4	. .	. .	. .	+ 1 36.6	S. 66 41 42.4	2 20.8	— 27 50 24.4	+ 8.3	Y.	
5	. .	. .	. .	— 55.6	8 39 11.9	9.3	+ 30 14 17.6	— 10.1	Y.	
6	30.192	40.0	30.0	+ 3 1.1	55 3 5.3	1 27.2	— 16 10 53.7	+ 5.0	Y.	
7	. .	. .	. .	+ 57.4	17 46 3.9	19.6	+ 21 7 15.3	— 7.0	Y.	
8	. .	. .	. .	+ 1 55.8	17 47 2.3	19.6	+ 21 6 16.9	— 7.0	Y.	
9	30.168	39.3	29.3	+ 1 34.4	52 26 42.6	1 19.4	— 13 34 23.2	+ 0.4	Y.	
10	. .	. .	. .	+ 2 48.8	0 47 53.8	0.8	+ 38 5 44.2	— 15.4	Y.	
11	. .	. .	. .	— 40.9	0 24 25.7	0.4	+ 38 29 12.7	— 15.3	Y.	
12	30.158	38.7	29.8	— 2 15.1	68 27 55.8	2 33.7	— 29 36 50.7	+ 7.3	Y.	
13	. .	. .	. .	— 47.8	21 59 22.1	24.7	+ 16 53 52.0	— 5.2	Y.	
14	. .	. .	. .	— 26.4	2 39 35.1	2.8	+ 36 14 0.9	— 11.0	Y.	Same right ascension.
15	. .	. .	. .	— 3 2.2	2 36 59.3	2.8	+ 36 16 36.7	— 11.0	Y.	
16	. .	. .	. .	+ 18.6	67 25 27.7	2 26.0	— 28 34 14.9	+ 6.5	Y.	
17	30.150	38.3	29.6	+ 1 20.4	67 26 29.5	2 26.1	— 28 35 16.8	+ 6.5	Y.	
18	. .	. .	. .	. .		. .		. .	Y.	
19	30.160	38.0	29.3	+ 1 44.7	S. 12 21 52.2	3 41.3	+ 26 28 5.3	. .	Y.	
20	30.038	53.2	48.0	— 1 9.3	N. 63 21 6.7	1 56.2	+ 77 43 18.3	+ 27.1	Y.	
21	. .	. .	. .	— 1 15.5	S. 17 28 46.5	18.5	+ 21 24 33.8	— 6.6	Y.	
22	. .	. .	47.0	+ 44.6	64 55 51.6	2 4.7	— 26 4 17.5	+ 8.0	Y.	
23	. .	. .	. .	+ 40.7	S. 8 30 47.1	8.8	+ 30 22 42.9	— 10.1	Y.	
24	. .	. .	. .	— 5.8	N. 0 9 57.5	0.2	+ 39 3 36.5	— 13.1	Y.	
25	. .	. .	. .	— 1 20.3	N. 0 11 11.9	0.2	+ 39 4 50.9	— 13.1	Y.	
26	30.040	49.5	46.7	— 42.3	S. 44 34 25.0	57.8	— 5 41 44.0	+ 2.2	Y.	
27	. .	. .	. .	+ 1 39.0	52 26 46.0	1 16.3	— 13 34 23.5	+ 4.3	Y.	
28	. .	. .	. .	+ 1 17.7	19 6 23.1	20.4	+ 19 46 55.3	— 6.4	Y.	
29	. .	. .	. .	+ 2 5.7	19 7 11.1	20.4	+ 19 46 7.3	— 6.4	Y.	
30	. .	. .	. .	— 1 30.5	7 43 37.2	8.0	+ 31 9 53.6	— 10.1	Y.	
31	. .	. .	. .	— 11.5	68 24 56.6	2 27.6	— 29 33 45.4	+ 7.8	Y.	
32	30.036	49.3	45.6	+ 2 54.8	68 28 2.9	2 28.1	— 29 36 52.2	+ 7.8	Y.	
33	. .	. .	. .	— 5.1	64 40 2.9	2 3.8	— 25 48 27.9	+ 6.9	Y.	
34	. .	. .	. .	— 25.6	64 39 42.5	2 3.8	— 25 48 7.5	+ 6.7	Y.	
35	. .	. .	. .	+ 2 16.1	62 27 20.4	1 52.5	— 23 35 34.1	+ 6.3	Y.	
36	. .	. .	. .	+ 2 51.0	66 2 57.6	2 11.9	— 27 11 30.7	+ 6.8	Y.	
37	30.050	49.2	45.2	+ 1 13.9	66 1 20.5	2 11.8	— 27 9 53.5	+ 6.8	Y.	
38	. .	. .	. .	— 1 16.0	67 38 50.9	2 22.4	— 28 47 34.5	+ 7.0	Y.	
39	. .	. .	. .	— 18.7	53 34 48.0	1 19.8	— 14 42 29.0	+ 4.0	Y.	
40	. .	. .	. .	+ 2 35.2	53 37 42.0	1 19.9	— 14 45 23.1	+ 4.0	Y.	
41	. .	. .	. .	+ 1 3.3	62 21 8.5	1 52.2	— 23 29 21.9	+ 5.8	Y.	
42	. .	. .	. .	— 1 48.7	53 43 16.6	1 20.2	— 14 50 58.0	+ 4.0	Y.	
43	. .	. .	. .	— 45.3	59 24 19.0	1 39.5	— 20 32 19.7	+ 5.1	Y.	
44	30.064	49.0	44.6	— 12.2	59 24 52.1	1 39.6	— 20 32 52.9	+ 5.1	Y.	
45	. .	. .	. .	— 2 32.1	73 22 35.1	3 15.4	— 34 32 11.7	+ 7.1	Y.	
46	. .	. .	. .	— 4 3.6	73 21 3.7	3 15.1	— 34 30 40.0	+ 7.1	Y.	
47	. .	. .	. .	— 38.6	38 24 27.7	46.9	+ 0 28 24.2	+ 0.6	Y.	
48	. .	. .	. .	+ 1 5.8	38 26 12.0	46.9	+ 0 26 39.9	+ 0.6	Y.	
49	. .	. .	. .	— 26.6	10 44 40.5	11.2	+ 28 8 47.1	— 6.0	Y.	
50	. .	. .	. .	+ 1 36.3	20 51 45.4	22.6	+ 18 1 30.8	— 3.1	Y.	
51	. .	. .	. .	+ 1 31.2	20 51 40.3	22.6	+ 18 1 35.9	— 3.1	Y.	
52	. .	. .	. .	— 1 24.7	11 23 41.6	11.9	+ 27 29 45.3	— 5.0	Y.	
53	30.046	47.8	42.3	— 2 50.6	73 27 12.6	3 17.0	— 34 36 50.8	+ 6.1	Y.	
54	. .	. .	. .	— 1 8.7	31 43 57.8	36.7	+ 7 9 4.3	+ 0.1	Y.	
55	. .	. .	. .	— 1 59.4	31 43 7.2	36.6	+ 7 9 55.0	+ 0.1	Y.	
56	. .	. .	. .	+ 1 23.2	41 1 30.5	51.6	— 2 8 43.3	+ 2.0	Y.	
57	. .	. .	. .	+ 1 22.8	41 1 30.0	51.6	— 2 8 42.8	+ 2.0	Y.	
58	. .	. .	42.2	— 2 2.6	70 53 4.0	2 49.5	— 32 2 14.7	+ 5.5	Y.	
59	. .	. .	. .	+ 54.2	66 11 1.6	2 13.6	— 27 19 36.4	+ 5.0	Y.	
60	. .	. .	. .	— 2 36.1	17 22 23.4	18.6	+ 21 30 56.8	— 1.5	Y.	
61	30.040	46.8	41.7	— 2 46.8	66 32 18.9	2 15.8	— 27 40 55.9	+ 4.9	Y.	
62	. .	. .	. .	. .		. .		. .	Y.	
63	29.824	55.0	47.5	+ 45.3	64 55 52.6	2 3.8	— 26 4 17.6	+ 8.1	Y.	
64	. .	. .	. .	+ 10.4	S. 0 40 12.6	0.7	+ 38 13 25.5	— 12.8	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES. A.			B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed	Nadir cor.	Corr'd.
						° ′ ″			″	″	″	″	″	″	r.	r.	r.
1874. Mar. 4	1	Lalande 10621	. .	3	III–VII	20	45	3.1	1.4	4.2	3.2	7.7	2.0	3.60	28.261	−0.618	27.635
	2	Lalande 10650	. .	2	VII, IX	"	"	"	"	"	"	"	"	"	29.608	. .	28.965
	3	Lalande 10666	. .	1	IX	"	"	"	"	"	"	"	"	"	29.843	. .	29.187
	4	B. A. C. 1851	6.0	3	III–VII	49	5	2.8	1.4	3.7	3.8	9.7	3.9	4.22	34.097	. .	33.477
	5	Anon. $5^h\ 52^m\ 1^s$	8.5	3	I–IX	39	10	1.2	0.2	1.6	1.9	5.5	0.0	1.73	36.058	. .	35.428
	6	Lacaille 2130	5.0	3	III–VII	88	35	7.2	.7.6	7.4	8.0	10.2	7.1	7.92	28.757	. .	28.144
	7	24 Ursæ Minoris, S. P.	. .	3	I–5	325	55	2.4	57.5	2.0	1.5	4.8	0.1	1.23	33 089	. .	32.474
	8	24 Ursæ Minoris, S. P.	. .	3	. .	325	55	2.0	57.1	2.0	1.0	4.8	0.0				
	9	Anon. $6^h\ 26^m\ 47^s$	7.5	3	I–IX	21	5	2.9	3.0	3.9	4.5	6.7	1.5	3.75	31.211	. .	30.568
	10	Lacaille 2420	7.5	3	III–VII	86	20	3.6	3.7	5.8	8.1	7.8	3.2	5.37	31.707	. .	31.094
	11	51 Cephei	. .	2	V, 5	331	40	6.8	4.9	9.7	8.9	10.8	5.1	7.70	30.470	. .	29.850
	12	O. Arg. S. 6004	. .	3	III–VII	87	40	6.1	6.8	7.3	9.3	9.8	5.1	7.40	33.010	. .	32.397
	13	Weisse VII, 290.	9.0	1	V	73	30	6.4	7.3	9.5	12.1	10.7	6.2	8.70	29.744	. .	29.126
	14	Weisse VII, 316.	8.0	2	VII, IX	"	"	"	"	"	"	"	"	"	31.054	. .	30.444
	15	O. Arg. S. 6754	. .	2	III, VII	77	40	3.9	5.7	6.0	7.3	8.4	3.5	5.80	33.089	. .	32.475
	16	O. Arg. S. 6762	. .	1	V	"	"	"	"	"	"	"	"	"	34.267	. .	33.649
	17	Anon. $7^h\ 29^m\ 48^s$	8.3	3	III–VII	37	15	4.1	4.1	5.3	6.0	7.3	3.3	4.68	32.424	. .	31.802
	18	Weisse (2) VII, 1022	9.2	3	V–IX	37	40	6.3	7.2	8.0	9.9	9.8	5.4	7.77	28.399	. .	27.773
	19	Anon. $7^h\ 44^m\ 29^s$	6.0	3	V–IX	58	30	2.1	2.2	2.7	5.7	6.1	2.5	3.55	32.500	. .	31.882
	20	Anon. $7^h\ 52^m\ 51^s$	7.5	3	III–VII	86	20	4.7	5.3	8.1	10.5	8.4	4.4	6.90	28.091	. .	27.478
	21	Lalande 15882	7.0	3	III–VII	23	5	5.0	6.0	7.2	7.9	8.5	4.8	6.57	33.413	. .	32.788
	22	Weisse (2) VIII, 181	8.5	3	V–IX	27	55	3.1	4.2	5.7	7.8	7.3	3.2	5.22	35.876	. .	35.245
	23	Anon. $8^h\ 22^m\ 45^s$	8.5	3	III–VII	93	30	5.7	8.8	8.2	12.1	10.0	5.2	8.33	36.077	. .	35.466
	24	Anon. $8^h\ 27^m\ 56^s$	8.0	3	V–IX	82	35	3.2	3.4	4.3	6.6	5.0	0.4	3.82	26.573	. .	25.965
	25	O. Arg S. 8887	7.5	3	III–VII	82	35	3.0	3.1	4.5	7.4	5.2	0.7	3.98	25.907	. .	25.293
	26	Lacaille 3574	6.0	3	III–VII	90	55	4.3	5.4	7.6	8.5	7.3	4.3	6.23	34.491	. .	33.879
	27	Lacaille 3621	6.5	3	III–VII	86	10	3.4	5.2	6.7	9.4	6.9	2.8	5.73	28.860	. .	28.247
	28	O. Arg. S. 9450	10.0	3	III–VII	82	25	3.8	4.0	5.7	7.9	5.2	1.6	4.70	27.082	. .	26.468
	29	Anon. $9^h\ 14^m\ 46^s$	9.0	1	V	87	35	4.4	4.3	6.2	10.3	7.2	3.0	5.90	30.650	. .	30.032
	30	O. Arg. S. 9615	8.0	1	IX	"	"	"	"	"	"	"	"	"	35.508	. .	34.917
	31	Anon. $9^h\ 17^m\ 45^s$	. .	3	V–IX	"	"	"	"	"	"	"	"	"	28.018	. .	27.411
	32	Nadir	. .	.	. .	200	0	1.7	3.2	4.7	8.2	4.8	2.6	4.20	30.601	. .	. .
10	33	Weisse V, 1686	9.0	2	III, V	38	50	3.3	3.2	6.3	8.2	8.2	1.9	5.18	32.035	−0.811	31.221
	34	Weisse V, 1701	8.3	2	VII, IX	"	"	"	"	"	"	"	"	"	2).957	. .	29.134
	35	B. A. C. 1947	6.5	3	V–IX	20	45	3.1	2.5	6.2	8.2	7.6	0.2	4.63	25.457	. .	24.630
	36	Anon. $6^h\ 7^m\ 28^s$	9.0	3	V–IX	19	59	59.1	58.9	61.8	61.9	63.5	56.1	60.22	30.228	. .	29.400
	37	24 Ursæ Minoris, S. P.	. .	3	I–5	325	55	4.7	2.2	6.1	6.4	7.2	1.7	4.72	33.412	. .	32.604
	38	Anon. $6^h\ 27^m\ 12^s$	8.5	3	III–VII	90	0	5.7	8.2	7.9	10.8	10.4	2.9	7.65	29.693	. .	28.888
	39	Lacaille 2420	. .	3	III–VII	86	20	2.8	3.8	5.8	8.9	7.1	0.4	4.80	31.904	. .	31.098
	40	51 Cephei	. .	2	V, 5	331	40	3.9	3.4	7.4	8.8	8.1	0.5	5.35	30.606	. .	29.793
	41	Anon. $6^h\ 52^m\ 12^s$	8.5	3	V–IX	89	35	7.2	10.8	10.9	14.2	12.2	5.2	10.08	31.393	. .	30.594
	42	17 Lyncis, (1st *)	7.8	1	V	357	55	5.1	8.1	10.0	12.2	10.9	oblit.	8.40	32.013	. .	31.202
	43	17 Lyncis, (2d *)	8.3	1	V	"	"	"	"	"	"	"	"	"	26.491	. .	25.672
	44	O. Arg. S. 6442	9.0	3	III–VII	85	55	5.2	7.8	9.7	13.8	11.6	4.4	8.75	28.353	. .	27.547
	45	Anon. $7^h\ 18^m\ 13^s$	8.5	3	III–VII	48	30	2.7	3.3	4.3	8.5	7.1	1.1	4.50	31.143	. .	30.330
	46	Weisse (2) VII, 678	8.0	3	III–VII	17	25	2.7	3.4	6.1	8.5	7.2	0.6	4.75	27.055	. .	26.236
	47	Weisse (2) VII, 915	8.5	3	V–IX	38	0	4.2	6.2	8.2	10.9	10.1	2.4	7.00	34.371	. .	33.552
	48	Anon. $7^h\ 42^m\ 54^s$	9.0	2	V, IX	88	40	5.7	10.7	10.6	13.8	12.1	5.1	9.67	29.695	. .	28.898
	49	O. Arg. N. 8445	9.0	2	VI, VII	11	45	2.8	3.8	4.8	7.1	6.2	59.4	4.02	31.247	. .	30.426
	50	Weisse (2) VII, 1650.	8.3	2	III, V	37	55	7.1	8.4	10.0	12.8	11.2	4.5	9.00	25.899	. .	25.085
	51	Weisse (2) VII, 1661.	8.5	2	VII, IX	"	"	"	"	"	"	"	"	"	30.163	. .	29.340
	52	Weisse VIII, 381	8.5	3	III–VII	46	20	6.4	9.4	10.7	13.3	13.1	5.0	9.65	35.354	. .	34.541
	53	B. A. C. 2885	5.5	3	III–VII	93	5	3.0	7.0	6.8	11.5	6.7	2.0	6.17	34.950	. .	34.145
	54	Anon $8^h\ 28^m\ 32^s$	8.0	2	VII, IX	"	"	"	"	"	"	"	"	"	33.360	. .	32.570
	55	Lacaille 3502	6.0	3	III–VII	90	40	3.4	5.6	5.5	10.2	6.2	0.2	5.18	34.078	. .	33.273
	56	Weisse (2) VIII, 1222	8.0	3	V–IX	54	15	7.2	9.4	10.1	15.0	12 0	7.1	10.13	30.152	. .	29.339
	57	Carrington 1325	9.2	1	V	337	0	3.2	2.8	6.8	6.8	7.2	0.6	4.57	31.088	. .	30.277
	58	Anon. $9^h\ 14^m\ 43^s$	9.2	2	V, IX	87	35	3.2	3.8	4.7	10.3	7.8	0.6	5.07	31.056	. .	30.258
	59	Anon. $9^h\ 26^m\ 19^s$	7.5	3	III–VII	95	0	4.3	8.2	9.2	13.5	10.8	3.3	8.22	27.409	. .	26.605
	60	Nadir	. .	.	. .	200	0	0.0	2.1	2.3	7.8	3.9	59.0	2.52	30.741	. .	. .
13	61	Anon. $6^h\ 26^m\ 37^s$	7.5	3	III–VII	21	5	5.7	8.7	9.8	14.4	10.2	1.5	8.38	31.647	−0.855	30.785
	62	56 Aurigæ, (2d *)	9.0	3	V–IX	15	10	4.9	8.8	10.0	13.9	8.2	0.8	7.77	29.696	. .	28.821
	63	Lacaille 2519.	7.0	3	III–VII	90	30	1.8	7.2	8.0	12.8	6.2	58.1	5.68	31.801	. .	30.952
	64	Lacaille 2528.	6.5	3	V–IX	"	"	"	"	"	"	"	"	"	33.598	. .	32.756
	65	Lalande 13873	7.5	3	III–VII	22	35	2.8	6.8	7.1	11.5	5.9	59.4	5.58	34.039	−0.855	33.177

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1874.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	+ 1 14.1	S. 0 46 17.7	0.8	+ 38 7 20.3	− 12.8	Y.	
2	. .	. .	. .	+ 32.4	0 45 36.0	0.8	+ 38 8 2.0	− 12.8	Y.	
3	. .	. .	. .	+ 25.5	0 45 29.1	0.8	+ 38 8 8.9	− 12.8	Y.	
4	29.808	53.8	46.3	− 1 49.0	29 3 15.2	32.4	+ 9 49 51.2	− 2.9	Y.	
5	. .	. .	. .	− 2 50.1	19 7 11.6	20.2	+ 19 46 7.0	− 6.3	Y.	
6	. .	. .	46.0	+ 58.2	S. 68 36 6.1	2 27.9	− 29 44 55.2	+ 8.2	Y.	Very nebulous.
7	29.844	53.0	45.7	− 1 17.6	N. 54 6 16.3	1 20.6	+ 86 58 44.3	+ 25.6	Y.	
8									Y.	
9	. .	. .	. .	− 17.8	S. 1 4 45.9	1.1	+ 37 48 51.8	− 12.0	Y.	
10	. .	. .	. .	− 34.3	S. 66 19 31.1	2 12.7	− 27 28 5.0	+ 7.2	Y.	
11	29.864	52.3	45.4	+ 4.7	N. 48 19 47.6	1 5.7	+ 87 14 32.1	− 23.9	Y.	
12	. .	. .	. .	− 1 15.2	S. 67 38 52.2	2 18.9	− 28 47 32.3	+ 7.3	Y.	
13	. .	. .	. .	+ 27.4	53 30 36.1	1 19.0	− 14 38 16.3	+ 4.2	Y.	
14	. .	. .	. .	− 13.9	53 29 54.8	1 19.0	− 14 37 35.0	+ 4.2	Y.	
15	. .	. .	. .	− 1 17.6	57 38 48.2	1 32.3	− 18 46 41.7	+ 5.0	Y.	
16	29.880	52.0	45.1	− 1 54.4	57 38 11.4	1 32.2	− 18 46 4.8	+ 5.0	Y.	
17	. .	. .	. .	− 56.5	17 14 8.2	18.2	+ 21 39 12.4	− 5.2	Y.	
18	. .	. .	. .	+ 1 9.8	17 41 17.5	18.7	+ 21 12 2.6	− 4.9	Y.	
19	. .	. .	. .	− 59.0	38 29 4.6	46.7	+ 0 23 47.5	+ 0.8	Y.	
20	29.924	51.4	44.3	+ 1 19.1	66 21 26.0	2 13.5	− 27 30 0.7	+ 6.3	Y.	
21	. .	. .	. .	− 1 27.4	3 3 39.2	3.2	+ 35 49 56.4	− 7.8	Y.	
22	. .	. .	. .	− 2 44.4	7 52 20.8	8.1	+ 31 1 9.9	− 6.2	Y.	
23	29.930	51.2	43.7	− 2 51.3	73 27 17.0	3 15.2	− 34 36 53.4	+ 6.6	Y.	
24	. .	. .	. .	+ 2 6.4	62 37 10.2	1 53.3	− 23 45 24.7	+ 5.4	Y.	
25	. .	. .	. .	+ 2 27.5	62 37 31.5	1 53.4	− 23 45 46.1	+ 5.3	Y.	
26	. .	. .	. .	− 2 1.6	70 53 4.7	2 48.6	− 32 2 14.5	+ 6.0	Y.	
27	29.946	50.8	42.9	+ 55.0	66 11 0.7	2 12.9	− 27 19 34.8	+ 5.5	Y.	
28	. .	. .	. .	+ 1 50.7	62 26 55.4	1 47.6	− 23 35 4.2	+ 5.1	Y.	Faint and uncertain.
29	. .	. .	. .	− 1.0	67 35 4.9	2 15.8	− 28 43 41.9	+ 5.4	Y.	
30	. .	. .	. .	− 2 34.1	67 32 31.8	2 21.9	− 28 41 14.9	+ 5.3	Y.	
31	29.950	50.3	42.4	+ 1 21.2	67 36 27.0	2 22.4	− 28 45 10.6	+ 5.3	Y.	
32	. .	. .	. .	. .		. .		. .	Y.	
33	. .	. .	. .	− 38.2	18 49 26.9	19.9	+ 20 3 52.0	− 6.7	Y.	
34	. .	. .	. .	+ 27.1	18 50 32.3	19.9	+ 20 2 46.6	− 6.7	Y.	
35	29.600	48.5	43.0	+ 2 48.3	0 47 52.9	0.8	+ 38 5 45.1	− 12.9	Y.	
36	. .	. .	. .	+ 18.8	S. 0 0 19.0	0.0	+ 38 53 19.8	− 13.1	Y.	
37	29.612	48.0	42.5	− 1 21.6	N. 54 6 16.9	1 20.5	+ 86 58 43.8	+ 26.4	Y.	
38	. .	. .	. .	+ 34.8	S. 70 0 42.5	2 39.3	− 31 9 43.0	+ 8.4	Y.	
39	. .	. .	. .	− 34.4	S. 66 19 30.4	2 12.6	− 27 28 4.2	+ 7.5	Y.	
40	29.640	47.8	42.3	+ 6.5	N. 48 19 48.2	1 5.6	+ 87 14 32.6	− 24.9	Y.	
41	. .	. .	. .	− 18.6	S. 69 34 51.5	2 35.9	− 30 43 48.6	+ 8.1	Y.	
42	. .	. .	. .	− 37.7	N. 22 5 29.3	23.7	+ 60 59 31.8	− 18.6	Y.	−0″.45 applied to the mean of A, B, C, and D.
43	. .	. .	. .	+ 2 15.6	N. 22 2 36.0	23.7	+ 60 56 38.5	− 18.6	Y.	−0″.45 applied to the mean of A, B, C, and D.
44	. .	. .	. .	+ 1 16.9	S. 65 56 25.7	2 10.4	− 27 4 57.3	+ 7.2	Y.	
45	. .	. .	. .	− 10.3	S. 28 29 54.2	31.8	+ 10 23 12.8	− 2.4	Y.	
46	. .	. .	. .	+ 1 58.0	N. 2 32 57.3	2.6	+ 41 26 38.7	− 11.9	Y.	
47	29.650	46.8	41.8	− 1 51.3	S. 17 58 15.7	19.0	+ 20 55 4.1	− 5.3	Y.	
48	. .	. .	. .	+ 34.5	S. 68 40 44.2	2 28.9	− 29 49 34.3	+ 7.4	Y.	Another star preceding.
49	. .	. .	. .	− 13.3	N. 8 15 9.3	8.5	+ 47 8 56.6	− 12.4	Y.	
50	. .	. .	. .	+ 2 34.0	S. 17 57 43.0	19.0	+ 20 55 36.8	− 4.4	Y.	
51	. .	. .	. .	+ 20.7	17 55 29.7	18.9	+ 20 57 50.2	− 4.4	Y.	
52	29.630	46.2	41.8	− 2 22.3	26 17 47.3	28.9	+ 12 35 22.6	− 1.6	Y.	
53	. .	. .	. .	− 2 9.9	73 2 56.3	3 10.0	− 34 12 27.5	+ 7.5	Y.	
54	29.640	46.0	41.3	− 1 20.6	73 3 45.6	3 10.1	− 34 13 16.9	+ 7.5	Y.	
55	. .	. .	. .	− 1 42.6	70 38 22.6	2 45.3	− 31 47 29.1	+ 7.1	Y.	
56	. .	. .	. .	+ 20.7	S. 34 15 30.8	39.9	+ 4 37 28.1	+ 1.2	Y.	
57	. .	. .	. .	− 8.7	N. 43 0 4.1	54.6	+ 81 54 37.5	− 14.8	Y.	
58	. .	. .	. .	− 8.1	S. 67 34 57.0	2 21.3	− 28 43 39.5	+ 6.4	Y.	
59	29.642	45.8	40.8	+ 1 46.4	75 1 54.6	3 36.0	− 36 11 51.8	+ 6.7	Y.	
60	. .	. .	. .	. .		. .		. .	Y.	High wind; mercury unsteady.
61	29.890	36.5	27.7	− 24.6	S. 1 4 43.8	1.1	+ 37 48 53.9	− 12.5	Y.	
62	. .	. .	. .	+ 36.9	N. 4 49 15.3	5.1	+ 43 42 59.2	− 14.3	Y.	
63	. .	. .	. .	− 29.8	S. 70 29 35.8	2 50.1	− 31 38 47.1	+ 8.5	Y.	
64	29.900	35.8	27.7	− 1 26.4	70 28 39.3	2 50.1	− 31 37 50.6	+ 8.5	Y.	
65	. .	. .	. .	− 1 39.6	S. 2 33 26.0	2.7	+ 36 20 10.1	− 11.2	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES. A.			B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
						°	′	″	″	″	″	″	″	″	r.	r.	r.
1874. Mar. 13	1	Lalande 14120 . .	. .	3	III–VII	22	0	5.2	7.8	10.3	14.2	8.8	2.0	8.05	32.454	−0.855	31.592
	2	Anon. $7^h\ 17^m\ 48^s$.	9.0	3	III–VII	73	25	4.0	8.9	10.3	16.8	9.2	2.6	8.63	33.715	. .	32.862
	3	O. Arg. S. 7063 . .	. .	3	III–VII	88	0	2.1	5.9	7.1	12.8	5.9	0.1	5.65	32.215	. .	31.365
	4	Anon. $7^h\ 34^m\ 45^s$.	8.0	2	VII, IX	73	15	1.4	4.6	6.9	12.8	4.5	58.5	4.78	33.635	. .	32.788
	5	Weisse (2) VII, 1366	. .	3	III–VII	38	40	5.1	9.8	11.9	16.7	10.2	2.9	9.43	32.125	. .	31.266
	6	Lalande 15882 . .	7.2	3	III–VII	23	5	4.1	8.9	10.2	14.7	8.1	1.5	7.92	33.677	. .	32.815
	7	Weisse (2) VIII, 181	8.3	3	III–VII	27	55	4.3	11.6	13.1	18.5	10.7	2.9	10.18	36.215	. .	35.354
	8	Lalande 16413 . .	6.5	3	III–VII	23	30	3.1	7.2	7.8	12.3	6.3	59.7	6.07	34.009	. .	33.147
	9	Anon. $8^h\ 26^m\ 59^s$.	8.0	3	V–IX	90	5	1.9	6.1	6.3	13.0	4.9	57.8	5.00	24.986	. .	24.144
	10	O. Arg. S. 8887 . .	8.0	3	III–VII	82	40	4.1	7.2	9.7	15.2	6.4	59.0	6.93	35.882	. .	35.031
	11	Anon. $8^h\ 45^m\ 28^s$.	7.0	3	III–VII	94	20	6.6	11.1	12.9	18.2	11.3	3.1	10.53	35.221	. .	34.373
	12	O. Arg. S. 9210 . .	8.0	3	III–VII	89	35	4.1	11.5	10.8	17.1	8.2	1.7	8.90	28.303	. .	27.454
	13	Weisse (2) IX, 87 .	7.7	3	III–VII	34	5	1.7	5.3	7.7	12.9	4.3	59.2	5.18	31.539	. .	30.680
	14	Anon. $9^h\ 14^m\ 47^s$.	9.0	3	III–VII	87	35	4.2	8.8	10.0	17.0	8.8	1.0	8.30	31.271	. .	30.421
	15	O. Arg. S. 9615 . .	7.5	1	IX	"	"	"	"	"	"	"	"	"	35.884	. .	35.056
	16	ζ^1 Antliæ (1st *) . .	. .	2	III, VII	90	10	4.0	9.2	9.8	15.6	8.1	0.8	7.92	28.706	. .	27.860
	17	ζ^1 Antliæ (2d *) . .	. .	1	V	"	"	"	"	"	"	"	"	"	28.990	. .	28.135
	18	ζ^2 Antliæ	. .	2	VII, IX	"	"	"	"	"	"	"	"	"	31.074	. .	30.228
	19	Anon. $9^h\ 40^m\ 42^s$.	7.0	3	III–VII	46	45	5.0	9.9	10.8	16.7	9.2	2.0	8.93	32.738	. .	31.881
	20	Lalande 4065. . . .	. .	3	III–VII	93	10	7.2	3.8	13.9	20.5	11.3	4.5	11.87	32.822	. .	31.974
	21	Nadir	. .	.	. .	200	0	3.3	7.8	7.8	16.2	5.5	2.5	7.18	30.934	. .	. .
20	22	B. A. C. 6375, S. P. .	6.0	3	IV½–V½	316	20	3.1	59.7	4.4	5.3	3.7	0.3	2.75	27.005	−0.693	26.315
	23	O. Arg. S. 5718 . .	8.2	3	III–VII	86	5	3.7	5.2	7.7	12.1	7.7	1.9	6.38	28.891	. .	28.203
	24	Groom. 2717, S. P. .	. .	2	V½, VI	312	50	6.9	5.7	10.6	10.6	9.1	3.8	7.78	27.443	. .	26.750
	25	B. A. C. 2326. . .	. .	3	1–5	336	15	6.2	6.8	10.5	10.8	9.2	3.9	7.90	30.211	. .	29.517
	26	Lacaille 2695. . .	7.5	3	V–IX	89	5	7.5	10.8	10.4	15.4	10.2	7.0	10.22	32.797	. .	32.116
	27	π Draconis, S. P. .	. .	3	IV–VI	304	25	3.9	4.0	6.2	8.8	6.6	1.9	5.23	30.322	. .	29.635
	28	O. Arg. S. 7063 . .	8.0	3	III–VII	88	0	6.6	8.2	8.8	14.2	8.3	5.2	8.55	32.007	. .	31.319
	29	B. A. C. 6752, S. P..	7.0	3	IV–VI	310	15	5.9	6.3	9.8	9.4	7.8	2.1	6.88	30.208	. .	29.524
	30	B. A. C. 2596 . .	6.0	2	V½, VI	344	40	5.4	7.4	10.8	12.8	9.6	4.5	8.42	32.972	. .	32.269
	31	Anon. $20^h\ 18^m\ 40^s$, S.P.	. .	3	IV–VI	303	15	2.8	3.5	6.3	7.9	4.4	0.0	4.15	31.376	. .	30.689
	32	π Ursæ Majoris . .	. .	3	IV–VI	354	10	3.2	4.2	8.0	8.8	5.4	0.2	4.97	34.800	. .	34.101
	33	Lacaille 3509. . .	7.2	2	V, VII	85	0	4.8	7.4	11.6	14.2	9.3	4.5	8.63	29.273	. .	28.583
	34	Lacaille 3511. . .	8.3	2	I, IX	"	"	"	"	"	"	"	"	"	27.566	. .	26.897
	35	Anon. $8^h\ 49^m\ 49^s$.	8.0	3	V–IX	93	55	2.1	4.9	5.2	9.2	5.8	0.1	4.55	27.017	. .	26.346
	36	Weisse (2) IX, 87 .	. .	3	III–VII	34	5	1.7	2.9	4.8	7.9	3.2	0.2	3.45	31.303	. .	30.606
	37	Lacaille 3905. . .	. .	3	III–VII	96	55	2.9	7.1	8.6	12.1	7.4	1.8	6.65	31.948	. .	31.263
	38	Weisse (2) IX, 1038.	7.5	3	III–VII	29	45	5.4	8.0	9.4	14.0	9.2	3.9	8.32	33.073	. .	32.375
	39	η Leonis	4.5	3	III–VII	41	30	7.1	9.8	11.2	16.6	10.6	6.9	10.37	29.706	. .	29.010
	40	Lacaille 4183. . .	6.0	2	VII, IX	86	50	6.9	10.3	13.3	17.4	10.6	7.2	10.95	30.010	. .	29.333
	41	Lacaille 4257. . .	6.5	3	III–VII	83	35	3.2	8.2	9.1	14.4	7.3	3.2	7.57	28.843	. .	28.154
	42	Anon. $10^h\ 22^m\ 38^s$.	7.8	3	III–VII	94	25	6.1	10.7	12.1	16.6	11.4	4.9	10.30	31.271	. .	30.585
	43	Nadir	. .	.	. .	200	0	4.9	8.7	9.1	15.9	6.8	5.6	8.50	30.813	. .	. .
25	44	ε Geminorum . . .	. .	3	III–VII	33	40	3.2	5.4	5.0	7.9	8.1	2.0	5.27	34.714	−0.833	33.876
	45	O. Arg. S. 5906 . .	. .	3	III–VII	87	45	4.2	4.3	4.6	8.4	7.3	2.3	5.18	32.966	. .	32.138
	46	Lalande 13873 . .	. .	3	III–VII	22	35	2.8	2.2	3.5	5.5	5.7	0.2	3.32	33.947	. .	33.107
	47	Anon. $7^h\ 6^m\ 49^s$. .	. .	1	V	73	10	3.4	2.8	4.8	8.9	7.3	1.2	4.73	32.284	. .	31.451
	48	Weisse VII, 274. .	8.5	2	I, IX	"	"	"	"	"	"	"	"	"	32.683	. .	31.863
	49	Weisse VII, 283 . .	8.0	3	III–VII	"	"	"	"	"	"	"	"	"	31.351	. .	30.520
	50	Moon N.	. .	3	III–VII	31	40	4.2	4.6	5.0	7.1	8.8	2.0	5.28	32.145	. .	31.307
	51	Lacaille 2864. . .	7.8	3	V–IX	84	45	0.0	59.8	3.0	5.4	4.5	59.3	2.00	32.132	. .	31.300
	52	O. Arg. S. 7443 . .	9.0	3	III–VII	82	50	3.9	3.3	4.1	7.8	6.7	0.2	4.33	33.263	. .	32.434
	53	O. Arg. S. 7458 . .	9.0	2	VII, IX	"	"	"	"	"	"	"	"	"	33.256	. .	32.437
	54	Anon. $7^h\ 53^m\ 59^s$.	9.0	3	III–VII	88	50	5.0	5.2	4.1	9.0	8.4	3.0	5.78	29.079	. .	28.252
	55	ζ Cancri (1st *) . .	6.5	2	I, IX	40	50	7.4	7.5	8.3	12.9	11.8	7.8	9.28	27.983	. .	27.134
	56	ζ Cancri (2d *) . .	8.0	3	III–VII	"	"	"	"	"	"	"	"	"	27.837	. .	27.001
	57	Anon. $8^h\ 13^m\ 56^s$.	9.0	3	III–VII	88	35	4.8	5.8	6.1	7.8	8.9	3.2	6.10	27.320	. .	26.492
	58	Anon. $8^h\ 14^m\ 38^s$.	8.5	2	VII, IX	"	"	"	"	"	"	"	"	"	24.092	. .	23.277
	59	Weisse (2) VIII, 810 . .		3	V–IX	31	20	3.5	3.4	4.9	8.0	8.2	2.0	5.00	30.226	. .	29.382
	60	Weisse VIII, 1012 (1st*)	. .	1	V	47	15	3.9	3.1	4.6	6.8	7.5	1.2	4.52	29.530	. .	28.697
	61	Weisse VIII, 1012 (2d *)	. .	2	VII, IX	"	"	"	"	"	"	"	"	"	29.093	. .	28.254
	62	Anon. $8^h\ 50^m\ 8^s$. .	8.8	2	V, VII	91	45	6.8	8.8	8.8	12.7	11.4	5.5	9.00	26.456	. .	25.628
	63	Lacaille 3595. . .	8.2	2	VII, IX	"	"	"	"	"	"	"	"	"	28.904	. .	28.091
	64	π^1 Ursæ Majoris . .	. .	1	V	354	55	5.1	7.2	9.7	oblit	10.3	4.2	5.83	36.007	. .	35.174
	65	α Lyncis	4.5	3	III–VII	24	0	2.4	2.8	4.8	5.8	6.4	0.6	3.80	34.697	−0.833	33.857

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1874.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	— 49.9	S. 1 59 18.1	2.1	+ 36 54 18.6	— 11.2	Y.	
2	29.910	35.2	27.5	— 1 29.7	53 23 38.9	1 21.8	— 14 31 21.9	+ 4.6	Y.	
3	. .	. .	. .	— 42.8	67 59 22.9	2 29.7	— 29 8 13.8	+ 7.8	Y.	
4	. .	. .	. .	— 1 27.4	53 13 37.4	1 21.4	— 14 21 20.0	+ 4.6	Y.	
5	. .	. .	. .	— 39.7	18 39 29.7	20.6	+ 20 13 48.5	— 4.7	Y.	
6	29.928	34.8	27.0	— 1 28.2	3 3 39.7	3.3	+ 35 49 55.8	— 8.9	Y.	
7	. .	. .	. .	— 2 47.8	7 52 22.4	8.4	+ 31 1 8.0	— 7.1	Y.	
8	. .	. .	. .	— 1 38.6	3 28 27.4	3.7	+ 35 25 7.7	— 8.0	Y.	
9	29.936	34.3	27.0	+ 3 3.5	70 8 8.5	2 47.4	— 31 17 17.1	+ 7.6	Y.	
10	. .	. .	. .	— 2 37.7	62 37 29.2	1 57.3	— 23 45 47.7	+ 6.5	Y.	
11	. .	. .	. .	— 2 17.1	74 17 53.5	3 34.1	— 35 27 48.8	+ 7.9	Y.	
12	29.960	34.0	27.0	+ 1 19.8	69 36 28.7	2 42.9	— 30 45 32.8	+ 7.3	Y.	
13	. .	. .	. .	— 21.3	14 4 43.9	15.3	+ 24 48 39.6	— 2.7	Y.	
14	. .	. .	. .	— 13.2	67 34 55.1	2 27.6	— 28 43 43.3	+ 6.9	Y.	
15	. .	. .	. .	— 2 38.5	67 32 29.8	2 26.7	— 28 41 17.7	+ 6.9	Y.	
16	. .	. .	. .	+ 1 7.1	70 11 15.0	2 48.0	— 31 20 24.2	+ 7.0	Y.	
17	. .	. .	. .	+ 58.4	70 11 6.4	2 48.0	— 31 20 15.6	+ 7.0	Y.	
18	29.945	34.0	26.8	— 7.2	70 10 0.8	2 47.8	— 31 19 9.8	+ 7.1	Y.	
19	. .	. .	. .	— 58.9	26 44 10.0	30.7	+ 12 8 58.1	+ 1.6	Y.	
20	29.940	34.0	26.8	— 1 1.9	S. 73 9 10.0	3 19.2	— 34 18 50.4	+ 7.0	Y.	
21	. .	. .	. .	. .		. .		. .	Y.	
22	29.990	52.7	46.5	+ 1 55.5	N. 63 38 1.8	1 57.7	+ 77 26 21.7	+ 27.5	Y.	
23	. .	. .	. .	+ 56.3	S. 66 6 2.7	2 11.6	— 27 14 35.5	+ 8.1	Y.	
24	29.994	52.5	45.2	+ 1 41.9	N. 67 8 10.3	2 18.6	+ 73 55 52.3	+ 27.4	Y.	
25	. .	. .	44.8	+ 15.1	N. 43 44 37.0	56.3	+ 82 39 12.1	— 24.2	Y.	
26	. .	. .	. .	— 1 6.3	S. 69 4 3.9	2 32.7	— 30 12 57.8	+ 8.7	Y.	
27	30.006	52.0	44.8	+ 11.4	N. 75 34 43.3	3 45.1	+ 65 27 52.8	+ 26.6	Y.	
28	. .	. .	. .	— 41.3	S. 67 59 27.2	2 24.8	— 29 8 13.2	+ 8.5	Y.	
29	30.014	51.8	44.2	+ 14.9	N. 69 44 38.2	2 38.5	+ 71 19 4.5	+ 25.9	Y.	
30	. .	. .	44.0	— 1 11.1	35 21 2.7	41.8	+ 74 15 23.3	— 20.8	Y.	
31	30.018	50.3	42.5	— 21.6	76 45 17.4	4 6.5	+ 64 16 57.3	+ 23.7	Y.	
32	. .	. .	42.3	— 2 8.5	N. 25 52 3.5	28.7	+ 64 46 11.0	— 16.1	Y.	
33	. .	. .	. .	+ 44.4	S. 65 0 53.0	2 6.5	— 26 9 20.7	+ 7.9	Y.	
34	30.020	50.0	41.2	+ 1 37.3	65 1 45.9	2 6.6	— 26 10 13.7	+ 8.0	Y.	
35	. .	. .	. .	+ 1 54.5	73 56 59.1	3 23.5	— 35 6 43.8	+ 9.2	Y.	
36	. .	. .	. .	— 19.0	14 4 44.4	14.9	+ 24 48 39.5	— 3.1	Y.	
37	30.024	49.2	40.0	— 39.6	76 54 27.1	4 10.5	— 38 4 58.8	+ 9.1	Y.	Faint.
38	. .	. .	. .	— 1 14.4	9 43 53.9	10.2	+ 29 9 34.7	— 1.7	Y.	
39	. .	. .	. .	+ 31.0	21 30 41.4	23.4	+ 17 22 34.0	+ 1.4	Y.	
40	30.030	49.0	40.6	+ 20.9	66 50 31.9	2 18.1	— 27 59 11.2	+ 8.0	Y.	
41	. .	. .	. .	+ 57.8	63 36 5.4	1 59.2	— 24 44 25.8	+ 7.8	Y.	
42	30.028	49.0	40.4	— 18.3	74 24 52.0	3 30.2	— 35 34 43.4	+ 8.3	Y.	
43	. .	. .	. .	. .		. .		. .	Y.	
44	30.090	50.2	48.2	— 2 1.5	13 38 3.8	14.2	+ 25 15 20.8	— 8.4	Y.	
45	. .	. .	. .	— 1 7.0	67 43 58.2	2 22.6	— 28 52 42.0	+ 8.5	Y.	
46	. .	. .	. .	— 1 37.4	2 33 26.0	2.6	+ 36 20 10.2	— 11.9	Y.	
47	. .	. .	. .	— 45.5	53 9 19.3	1 18.4	— 14 16 58.9	+ 4.9	Y.	
48	. .	. .	. .	— 58.4	53 9 6.4	1 18.4	— 14 16 46.0	+ 5.0	Y.	
49	30.084	50.0	46.2	— 16.3	53 9 48.5	1 18.5	— 14 17 28.2	+ 5.0	Y.	
50	30.074	50.0	45.5	— 41.0	11 39 24.3	4 22.6	+ 27 9 51.9	. .	Y.	Very steady.
51	. .	. .	. .	— 41.0	64 44 21.0	2 4.3	— 25 52 46.5	+ 8.0	Y.	
52	. .	. .	. .	— 1 16.3	62 48 48.0	1 54.4	— 23 57 3.6	+ 7.6	Y.	
53	. .	. .	. .	— 1 16.4	62 48 47.9	1 54.4	— 23 57 3.5	+ 7.5	Y.	
54	. .	. .	. .	+ 54.8	68 51 0.6	2 31.5	— 29 59 53.3	+ 8.9	Y.	
55	. .	. .	. .	+ 1 29.8	20 51 39.1	22.5	+ 18 1 37.2	— 4.1	Y.	
56	. .	. .	. .	+ 1 34.0	20 51 43.2	22.5	+ 18 1 33.1	— 4.1	Y.	
57	. .	. .	. .	+ 1 50.0	68 36 56.1	2 29.7	— 29 45 47.0	+ 8.9	Y.	
58	30.074	49.0	44.5	+ 3 30.7	68 38 36.8	2 29.9	— 29 47 27.9	+ 8.9	Y.	
59	. .	. .	. .	+ 19.4	11 20 24.4	11.9	+ 27 33 2.5	— 6.0	Y.	
60	. .	. .	. .	+ 40.9	27 15 45.4	30.5	+ 11 37 22.9	— 0.9	Y.	
61	. .	. .	. .	+ 54.8	27 15 59.3	30.5	+ 11 37 9.0	— 0.9	Y.	
62	. .	. .	. .	+ 2 17.0	71 47 26.0	2 57.8	— 32 56 45.0	+ 9.5	Y.	
63	30.068	48.7	44.0	+ 59.8	S. 71 46 8.8	2 57.6	— 32 55 27.6	+ 9.5	Y.	
64	. .	. .	. .	— 2 42.2	N. 25 7 36.3	27.7	+ 64 1 42.8	— 14.7	Y.	—0″.87 applied to mean of A, B, E, and F.
65	. .	. .	. .	— 2 0.9	S. 3 58 2.9	4.1	+ 34 55 31.8	— 6.2	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No of mic. readings.	Transit Wires.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed	Nadir cor.	Corr'd.
1874.						° ′ ″	″	″	″	″	″	″	r.	r.	r.
Mar. 25	1	*k* Ursæ Majoris . .	6.0	3	IV–VI	355 15 4.8	7.3	9.8	9.8	10.2	2.4	7.38	26.844	−0.833	26.005
	2	B. A. C. 3284 . .	7.0	3	IV½–V½	339 10 3.6	2.8	7.8	6.3	8.0	1.0	4.92	28.084	. .	27.247
	3	79 Draconis, S. P. . .	. .	3	V, V½, VI	312 0 3.5	2.5	5.7	4.8	6.5	59.2	3.70	26.826	. .	25.999
	4	*η* Leonis	5.0	3	III–VII	41 30 7.0	8.7	10.0	12.5	12.9	7.1	9.70	29.782	. .	28.946
	5	Lalande 20114 . .	6.5	3	III–VII	81 55 5.8	7.9	7.9	11.8	9.8	5.6	8.13	28.000	. .	27.171
	6	Anon. $10^h\ 22^m\ 31^s$.	8.5	1	V	353 55 5.8	7.8	10.9	10.8	11.9	4.1	8.55	26.517	. .	25.684
	7	226 Cephei, S. P. . .	6.0	2	V½, VI	314 30 0.9	58.8	2.0	1.5	3.7	58.0	0.82	30.428	. .	29.606
	8	Nadir	. .	.	. .	199 59 58.7	58.1	59.9	64.0	61.4	58.4	60.08	30.686	. .	. .
27	9	56 Aurigæ	. .	3	III–VII	15 10 0.8	0.4	0.6	1.8	3.2	58.5	0.88	28.033	−0.810	27.214
	10	Nadir	. .	.	. .	200 0 3.7	3.0	3.0	6.3	5.9	4.2	4.35	30.802	. .	. .
	11	Lalande 14120 . .	8.0	3	III–VII	22 0 3.9	2.4	4.1	4.4	7.2	3.6	4.27	32.318	. .	31.501
	12	Anon. $7^h\ 17^m\ 10^s$.	. .	2	VII, IX	83 35 4.2	3.0	4.7	7.4	8.1	3.6	5.17	37.308	. .	36.512
	13	B. A. C. 2320 . .	. .	3	2–4	329 55 8.9	6.9	10.1	10.2	12.0	6.7	9.13	31.842	. .	31.030
	14	Anon. $7^h\ 41^m\ 21^s$.	8.2	3	III–VII	20 35 6.0	6.0	8.2	8.8	10.8	4.4	7.37	34.147	. .	33.329
	15	Anon. $7^h\ 52^m\ 49^s$.	8.5	3	III–VII	86 20 2.0	1.1	2.8	4.9	5.2	0.8	2.80	28.130	. .	27.325
	16	Lalande 16367 . .	8.0	3	III–VII	31 25 2.1	1.1	3.1	5.7	6.6	1.8	3.40	33.542	. .	32.727
	17	B. A. C. 2830 . .	. .	3	1–5	336 15 4.9	3.0	8.1	5.7	8.5	3.0	5.53	33.941	. .	33.130
	18	*π* Ursæ Majoris . .	. .	3	IV–VI	354 10 6.9	7.4	10.7	10.8	11.2	5.9	8.82	35.148	. .	34.332
28	19	B. A. C. 2461 . .	6.0	2	I, IX	90 25 4.9	5.3	6.7	7.9	7.2	2.9	5.82	31.246	−0.797	30.479
	20	Anon. $7^h\ 19^m\ 52^s$.	8.0	3	III–VII	" " "	"	"	"	"	"	"	34.268	. .	33.477
	21	Anon. $7^h\ 34^m\ 21^s$.	8.0	3	III–VII	37 35 2.0	2.2	4.5	6.5	6.9	2.0	4.02	27.061	. .	26.260
	22	Anon. $7^h\ 42^m\ 50^s$.	8.5	3	IV–VI	88 40 4.2	5.2	6.2	8.9	7.8	4.4	6.12	29.553	. .	28.758
	23	Anon. $7^h\ 52^m\ 50^s$.	8.5	3	III–VII	86 20 5.9	5.5	7.8	12.1	8.8	5.2	7.55	28.296	. .	27.504
	24	Lalande 16413 . .	6.5	3	III–VII	23 30 4.8	5.8	6.9	9.0	8.2	4.0	6.45	34.094	. .	33.290
	25	B. A. C. 2830 . .	6.0	3	1–5	336 15 4.2	2.9	7.3	5.4	7.9	1.9	4.93	33.927	. .	33.129
	26	Anon. $8^h\ 30^m\ 36^s$.	7.0	2	I, IX	51 45 7.0	6.7	9.2	13.4	11.4	6.8	9.08	33.129	. .	32.326
	27	Lalande 16960 . .	8.0	3	III–VII	" " "	"	"	"	"	"	"	34.748	. .	33.950
	28	4 Cephei, S. P. . .	. .	3	IV–VI	305 10 3.1	1.2	5.1	5.0	5.1	0.1	3.27	33.336	. .	32.546
	29	76 Draconis, S. P. . .	6.0	3	1–5	321 0 1.2	1.0	5.1	4.8	4.6	59.3	2.67	33.287	. .	32.491
	30	σ^2 Ursæ Majoris . .	5.0	3	IV–VI	351 15 6.9	7.1	11.0	11.1	10.8	4.7	8.60	30.589	. .	29.785
	31	*α* Lyncis	4.5	3	III–VII	24 0 5.9	6.8	9.8	10.8	9.4	3.9	7.77	34.864	. .	34.060
	32	*k* Ursæ Majoris . .	5.5	3	IV–VI	355 15 2.0	2.6	5.2	5.5	5.4	58.4	3.18	26.726	. .	25.923
	33	B. A. C. 3275 . .	7.0	3	IV½–V½	340 10 4.1	4.1	8.8	9.3	7.2	1.1	5.77	27.608	. .	26.808
	34	11 Cephei, S. P. . .	5.5	3	IV–VI	309 40 5.2	4.2	7.7	5.6	7.2	2.9	5.47	31.175	. .	30.386
	35	79 Draconis, S. P. . .	7.0	3	IV½–V½	312 0 5.0	3.6	8.6	8.0	7.2	1.3	5.62	26.913	−0.797	26.118
	36	Moon N.	. .	3	III–VII	41 35 3.8	5.1	7.2	10.2	8.3	4.2	6.47	31.453	−0.499	30.951
	37	32 Ursæ Majoris . .	5.5	3	IV–VI	353 10 5.0	5.9	8.7	10.6	9.7	3.5	7.23	31.413	−0.797	30.609
	38	Anon. $10^h\ 16^m\ 0^s$.	9.0	1	IX	56 50 oblit.	10.4	11.2	15.6	13.6	9.1	13.06	37.300	. .	36.502
	39	226 Cephei, S. P. . .	. .	3	IV½–V½	314 30 4.4	1.9	6.0	5.5	5.8	0.6	4.03	30.624	. .	29.830
	40	Nadir	. .	.	. .	200 0 3.5	3.7	5.5	10.0	5.2	3.2	5.18	30.813	. .	. .
30	41	Anon. $7^h\ 19^m\ 54^s$.	8.2	2	I, IX	90 25 4.8	4.9	5.8	7.1	6.2	2.8	5.27	34.094	−0.783	33.341
	42	B. A. C. 2461 . .	6.0	3	III–VII	" " "	"	"	"	"	"	"	31.106	. .	30.329
	43	Lacaille 2864 . .	8.0	3	III–VII	84 45 4.0	2.2	5.9	6.8	6.7	1.9	4.58	32.094	. .	31.316
	44	Anon. $7^h\ 41^m\ 21^s$.	8.2	3	III–VII	20 35 3.4	2.2	5.4	5.4	6.5	1.2	4.02	34.000	. .	33.209
	45	B. A. C. 2830. . .	. .	3	1–5	336 15 2.8	59.4	4.7	2.9	5.8	59.7	2.55	33.851	. .	33.067
	46	O. Arg. S. 8776 . .	8.3	3	III–VII	82 45 4.4	3.4	5.1	7.3	5.7	2.2	4.68	33.326	. .	32.547
	47	O. Arg. S. 9154 . .	8.0	3	III–VII	89 35 3.7	3.3	4.3	6.4	5.2	1.4	4.05	33.253	. .	32.476
	48	Anon. $8^h\ 57^m\ 17^s$.	6.5	3	V–IX	97 45 1.8	1.1	2.5	3.6	3.2	59.3	1.92	32.792	. .	32.026
	49	B. A. C. 7363, S. P. .	6.0	3	IV–VI	309 50 7.1	4.8	9.5	7.2	8.6	5.3	7.08	28.083	. .	27.308
	50	O. Arg. S. 9615 . .	. .	3	III–VII	87 35 5.1	3.0	5.6	8.5	7.3	2.7	5.37	35.378	. .	34.600
	51	*d* Ursæ Majoris . .	5.5	3	IV–VI	348 30 4.5	4.6	9.0	8.5	8.5	3.7	6.47	29.045	. .	28.254
	52	B. A. C. 3275 . .	6.0	3	IV½–V½	340 10 6.0	4.3	9.5	10.1	8.8	3.4	7.02	27.622	. .	26.836
	53	11 Cephei, S. P. . .	5.5	3	IV–VI	309 40 1.4	59.2	2.2	0.4	3.0	58.8	0.83	30.992	. .	30.217
	54	79 Draconis, S. P. . .	7.0	3	IV½–V½	312 0 3.4	1.4	5.9	5.0	5.3	59.2	3.37	26.834	. .	26.053
	55	Lacaille 4257. . .	6.5	3	III–VII	83 35 2.9	2.4	5.2	8.5	6.2	2.1	4.55	28.647	. .	27.871
	56	Anon. $10^h\ 22^m\ 34^s$.	. .	3	III–VII	94 25 5.0	4.1	6.2	9.4	7.3	3.3	5.88	31.008	. .	30.312
	57	226 Cephei, S. P. . .	. .	3	IV½–V½	314 30 5.7	2.3	5.9	6.1	7.1	2.2	4.88	30.675	. .	29.895
	58	*ι* Cephei, S. P. . .	5.5	3	IV–VI	304 30 3.6	1.4	6.3	7.2	6.6	2.0	4.52	32.145	. .	31.369
	59	Lalande 21185 . .	8.0	3	III–VII	22 5 0.8	1.2	3.8	5.2	3.8	59.0	2.30	31.249	. .	30.459
	60	Lacaille 4646. . .	7.0	3	III–VII	84 40 3.8	3.6	7.2	9.4	7.2	3.3	5.75	33.673	. .	32.895
	61	Lacaille 4758. . .	7.0	3	III–VII	86 10 5.9	7.4	10.4	13.3	10.0	4.5	8.58	27.614	−0.783	26.836
	62	Moon N.	. .	3	III–VII	52 0 5.2	5.3	6.8	9.8	8.0	4.0	6.52	25.476	−0.485	24.990
	63	B. A. C. 8273, S. P. .	. .	3	IV–VI	306 0 5.9	4.9	8.2	9.2	7.6	3.7	6.58	24.741	−0.783	23.965
	64	B. A. C. 8314, S. P. .	6.5	3	IV–VI	312 35 4.8	2.4	7.3	5.9	6.9	0.8	4.68	24.359	. .	23.586
	65	Nadir	. .	.	. .	200 0 4.5	5.8	7.7	11.4	7.1	4.5	6.83	30.852	−0.783	. .

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1874.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	″	° ′ ″	″		
1	30.066	48.2	44.0	+ 2 5.2	N. 24 42 47.4	27.2	+ 63 36 53.4	− 13.0	Y.	
2	. .	. .	. .	+ 1 26.3	40 48 28.8	51.0	+ 79 42 58.6	− 15.5	Y.	
3	30.050	48.0	43.3	+ 2 5.4	N. 67 57 50.9	2 25.2	+ 73 6 5.1	+ 17.1	Y.	
4	. .	. .	. .	+ 33.0	S. 21 30 42.7	23.3	+ 17 22 32.8	+ 0.9	Y.	
5	. .	. .	. .	+ 1 28.7	S. 61 56 36.8	1 50.6	− 23 4 48.6	+ 8.3	Y.	
6	. .	. .	. .	+ 2 15.2	N. 26 2 36.2	28.9	+ 64 56 43.9	− 7.9	Y.	
7	30.046	47.8	43.1	+ 12.3	65 29 46.8	2 9.1	+ 75 34 25.3	+ 13.1	Y.	
8	. .	. .	. .	. .		. .		. .	Y.	
9	29.950	56.0	53.3	+ 1 27.3	N. 4 48 31.8	4.9	+ 43 42 15.5	− 14.8	Y.	
10	. .	. .	. .	. .		. .		. .	Y.	
11	. .	. .	. .	− 47.0	S. 1 59 17.2	2.0	+ 36 54 19.6	− 12.0	Y.	
12	. .	. .	. .	− 3 24.1	S. 63 31 41.1	1 56.1	− 24 39 58.4	+ 7.8	Y.	
13	29.940	55.0	50.2	− 32.3	N. 50 5 23.1	1 9.4	+ 89 0 11.3	− 25.1	Y.	
14	. .	. .	. .	− 1 44.3	S. 0 33 23.0	0.6	+ 38 20 15.2	− 11.7	Y.	
15	. .	. .	. .	+ 1 23.8	66 21 26.6	2 12.3	− 27 30 0.1	+ 8.6	Y.	
16	. .	. .	. .	− 1 25.5	S. 11 23 37.9	11.8	+ 27 29 49.1	− 7.1	Y.	
17	30.008	53.0	47.8	− 1 38.1	N. 43 46 32.6	56.0	+ 82 41 7.4	− 21.5	Y.	
18	. .	. .	47.7	− 2 15.8	N. 25 52 6.9	28.4	+ 64 46 14.1	− 17.3	Y.	
19	. .	. .	. .	− 15.0	S. 70 24 50.8	2 41.8	− 31 33 53.8	+ 9.4	Y.	
20	30.020	55.0	52.0	− 1 49.0	70 23 16.8	2 41.5	− 31 32 19.5	+ 9.4	Y.	
21	. .	. .	. .	+ 1 57.2	17 37 1.2	18.5	+ 21 16 19.1	− 6.0	Y.	
22	30.028	54.8	50.4	+ 38.9	68 40 45.0	2 28.2	− 29 49 34.4	+ 9.3	Y.	Prece led by smaller stars ; same declination.
23	. .	. .	. .	+ 1 18.2	66 21 25.8	2 12.4	− 27 29 59.4	+ 8.9	Y.	
24	. .	. .	. .	− 1 43.1	S. 3 28 23.3	3.5	+ 35 25 12.0	− 9.4	Y.	
25	30.040	54.0	49.4	− 1 38.1	N. 43 46 33.1	55.9	+ 82 41 7.8	− 21.6	Y.	
26	. .	. .	. .	− 1 12.9	S. 31 43 56.2	36.1	+ 7 9 6.5	+ 0.1	Y.	
27	. .	. .	. .	− 2 3.8	S. 31 43 5.3	36.1	+ 7 9 57.4	+ 0.1	Y.	
28	. .	. .	49.3	− 1 19.8	N. 74 51 16.5	3 32.6	+ 66 11 32.1	+ 23.5	Y.	
29	. .	. .	. .	− 1 18.1	59 1 15.4	1 37.1	+ 82 3 28.7	+ 21.9	Y.	
30	30.048	53.2	48.3	+ 6.8	N. 28 44 44.6	32.1	+ 67 38 55.5	− 16.1	Y.	
31	. .	. .	. .	− 2 7.2	S. 3 58 0.6	4.1	+ 34 55 34.1	− 6.5	Y.	
32	. .	. .	. .	+ 2 7.7	N. 24 42 49.1	27.0	+ 63 36 54.9	− 13.6	Y.	
33	30.070	53.2	48.2	+ 1 40.0	39 48 14.2	48.8	+ 78 42 41.8	− 16.0	Y.	
34	. .	. .	. .	− 12.1	70 20 6.6	2 42.7	+ 70 43 31.9	+ 19.0	Y.	
35	. .	. .	. .	+ 2 1.7	N. 67 57 52.7	+ 2 24.3	+ 73 6 4.2	+ 17.9	Y.	
36	30.076	52.5	46.2	− 29.8	S. 21 34 36.7	− 4 33.9	+ 17 23 36.0	. .	Y.	North wire.
37	. .	. .	. .	− 19.1	N. 26 50 11.9	+ 29.8	+ 65 44 20.5	− 10.1	Y.	
38	. .	. .	. .	− 3 23.7	S. 36 46 49.3	43.9	+ 2 6 5.6	+ 4.7	Y.	+0″.68 applied to mean of C, D, E, and F.
39	30.076	52.0	47.0	+ 5.3	N. 65 29 50.7	2 8.2	+ 75 34 22.3	+ 14.0	Y.	
40	. .	. .	. .	. .		. .		. .	Y.	
41	. .	. .	. .	− 1 44.7	S. 70 23 20.5	2 39.5	− 31 32 21.2	+ 9.5	Y.	
42	29.940	57.0	57.0	− 10.3	70 24 55.0	2 39.7	− 31 33 55.9	+ 9.5	Y.	
43	. .	. .	. .	− 41.2	64 44 23.3	2 1.2	− 25 52 45.7	+ 8.3	Y.	
44	. .	. .	. .	− 1 40.6	S. 0 33 23.5	0.6	+ 38 20 14.7	− 11.7	Y.	
45	29.964	56.2	54.3	− 1 36.1	N. 43 46 33.6	55.2	+ 82 41 7.6	− 21.8	Y.	
46	. .	. .	. .	− 1 19.8	S. 62 43 44.8	1 51.5	− 23 51 57.5	+ 8.4	Y.	
47	29.960	56.0	53.3	− 1 17.6	69 33 46.4	2 33.8	− 30 42 41.4	+ 9.8	Y.	
48	. .	. .	. .	− 1 3.5	S. 77 43 58.4	4 19.9	− 38 54 39.5	+ 11.1	Y.	
49	29.970	55.5	52.2	+ 1 24.4	N. 70 8 28.6	2 39.0	+ 70 55 13.6	+ 22.0	Y.	
50	. .	. .	. .	− 2 24.1	S. 67 32 41.2	2 19.2	− 28 41 21.6	+ 9.6	Y.	
51	. .	. .	53.0	+ 54.7	N. 31 28 58.8	35.4	+ 70 23 13.0	− 15.3	Y.	
52	. .	. .	. .	+ 1 39.2	39 48 13.8	48.3	+ 78 42 40.9	− 16.3	Y.	
53	29.964	55.2	50.4	− 6.8	70 20 6.0	2 41.3	+ 70 43 33.9	+ 19.3	Y.	
54	. .	. .	50.4	+ 2 3.7	N. 67 57 52.9	2 22.7	+ 73 6 5.6	+ 18 2	Y.	
55	. .	. .	50.4	+ 1 6.7	S. 63 36 11.2	1 56.7	− 24 44 29.1	+ 9.3	Y.	
56	. .	. .	. .	− 9.8	S. 74 24 56.1	3 25.6	− 35 34 42.9	+ 10.3	Y.	
57	29.970	54.0	50.0	+ 3.3	N. 65 29 51.8	2 7.0	+ 75 34 22.4	+ 14.4	Y.	
58	29.974	54.0	49.4	− 42.9	N. 75 29 38.4	3 41.5	+ 65 33 1.3	+ 13.7	Y.	
59	. .	. .	. .	− 14.4	S. 2 4 47.9	2.1	+ 36 48 48.8	− 0.2	Y.	
60	. .	. .	. .	− 1 30.7	64 38 35.0	2 2.7	− 25 46 58.9	+ 9.5	Y.	
61	. .	. .	. .	+ 1 39.1	66 11 47.7	+ 2 11.8	− 27 20 20.7	+ 9.6	Y.	
62	29.968	53.0	47.2	+ 2 37.0	S. 32 2 43.6	−13 7.5	+ 7 4 2.7	. .	Y.	North wire.
63	. .	. .	. .	+ 3 9.1	N. 73 56 44.3	+ 3 20.7	+ 67 6 16.2	+ 7.7	Y.	
64	29.954	52.5	46.3	+ 3 21.0	N. 67 21 34.3	2 19.6	+ 73 42 27.3	+ 6.3	Y.	
65	. .	. .	. .	. .		. .		. .	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1874. Apr.	2	1 Weisse VIII, 381 .	9.0	3	III–VII	46 20 4.2	6.9	9.1	12.5	9.7	2.9	7.55	35.209	−0.724	34.483
		2 Anon. $8^h\ 30^m\ 35^s$.	8.5	3	III–VII	51 45 1.8	5.2	5.1	10.9	6.3	0.5	4.97	32.916	. .	32.191
		3 Lalande 16960 . .	7.8	2	VII, IX	" " "	"	"	"	"	"	"	34.501	. .	33.773
		4 Weisse VIII,1012(1st *)	8.2	2	I, IX	47 15 1.8	3.1	4.3	8.2	5.4	59.2	3.67	29.434	. .	28.700
		5 Weisse VIII,1012(2d *)	8.0	3	III–VII	" " "	"	"	"	"	"	"	29.028	. .	28.302
		6 Weisse (2) VIII, 1181	8.0	3	III–VII	36 45 0.1	2.3	4.7	8.2	5.2	57.7	3.03	34.792	. .	34.064
		7 Anon. $8^h\ 57^m\ 16^s$.	6.5	3	III–VII	97 45 2.8	4.8	6.6	11.7	6.2	0.3	5.40	33.043	. .	32.327
		8 Anon. $9^h\ 14^m\ 59^s$.	8.0	2	III, V	87 30 3.1	3.2	5.4	11.5	5.2	0.5	4.82	36.539	. .	35.819
		9 O. Arg. S. 9615 . .	8.0	2	VII, IX	" " "	"	"	"	"	"	"	25.845	. .	25.104
		10 B. A. C. 3275 . .	7.0	3	V, V½, VI	340 10 4.5	5.5	9.4	12.8	7.2	0.6	6.67	27.554	. .	26.824
		11 28 Ursæ Majoris . .	. .	3	IV–VI	354 40 6.1	8.8	13.0	14.9	10.2	4.2	9.53	31.045	. .	30.315
		12 79 Draconis, S. P . .	. .	3	IV–VI	312 0 5.3	6.2	8.8	11.0	7.1	1.0	6.57	26.809	. .	26.095
		13 Weisse (2) X, 1316 .	7.0	3	III–VII	37 54 57.8	58.4	60.8	65.0	59.9	54.8	59.45	28.084	. .	27.356
		14 Rumker 3113 . .	9.5	1	V	46 35 6.9	8.3	10.1	14.3	9.8	3.9	8.88	30.128	. .	29.404
		15 Anon. $10^b\ 22^m\ 31^s$.	8.3	3	IV–VI	353 55 5.4	5.7	11.2	14.2	9.4	3.6	8.25	26.521	. .	25.791
		16 38 Leonis Minoris . .	5.5	3	III–VII	20 20 4.2	6.9	7.9	13.8	7.2	0.7	6.78	31.697	. .	30.965
		17 Lacaille 4437 . .	6.5	3	III–VII	95 5 8.2	10.1	12.8	19.3	11.6	6.1	11.35	28.630	. .	27.913
		18 Nadir	. .	.	. .	200 0 3.4	6.2	6.2	14.5	5.4	2.7	6.40	30.780	. .	. .
	4	19 Weisse (2) VII, 1366 . .	. .	3	III–VII	38 40 4.7	6.4	9.8	12.7	9.2	2.9	7.62	32.012	−0.713	31.295
		20 Weisse VIII, 601 .	7.0	3	III–VII	45 45 4.9	6.2	8.8	12.1	6.8	1.7	6.75	35.372	. .	34.657
		21 Anon. $8^h\ 30^m\ 10^s$.	8.0	3	V–IX	89 45 8.9	13.8	14.1	18.9	12.4	6.9	12.50	36.401	. .	35.701
		22 Dorpat 1270 (1st *) .	8.3	2	I, IX	61 0 3.2	6.4	7.6	12.9	6.2	1.8	6.35	28.029	. .	27.318
		23 Dorpat 1270 (2d *) .	8.0	2	III, VII	" " "	"	"	"	"	"	"	28.077	. .	27.365
		24 Anon. $8^h\ 47^m\ 47^s$.	8.0	3	V–IX	91 0 1.7	4.3	5.6	9.4	3.2	58.1	3.72	29.691	. .	28.991
		25 Anon. $9^h\ 0^m\ 35^s$. .	8.5	3	III–VII	37 25 5.4	6.9	9.1	14.0	7.7	2.5	7.60	36.086	. .	35.369
		26 a Lyncis	4.5	3	III–VII	21 0 1.8	4.0	6.7	11.2	4.3	59.2	4.53	34.657	. .	33.937
		27 d Ursæ Majoris . .	. .	2	V, VI	348 30 3.2	6.0	10.4	12.9	5.6	0.6	6.45	28.872	. .	28.153
		28 11 Cephei, S. P. . .	. .	3	IV–VI	309 40 5.7	7.5	11.0	13.3	7.5	3.8	8.13	30.912	. .	30.207
		29 Weisse (2) IX, 9609 .	. .	3	III–VII	40 55 5.8	10.8	12.2	17.4	9.2	5.2	10.10	34.214	. .	33.498
		30 Anon. $10^h\ 4^m\ 25^s$.	8.5	3	III–VII	94 54 57.2	61.7	62.8	69.2	61.4	54.2	61.08	30.341	. .	29.635
		31 Anon. $10^h\ 14^m\ 37^s$.	7.5	3	III–VII	81 50 2.5	4.2	5.3	12.2	3.8	58.3	4.38	26.419	. .	25.710
		32 38 Leonis Minoris . .	. .	3	III–VII	20 20 2.3	5.4	7.8	12.5	4.2	57.9	5.02	31.591	. .	30.870
		33 Lacaille 4437. . .	7.0	3	V–IX	95 5 1.6	5.8	7.5	14.8	5.2	58.4	5.55	28.570	. .	27.872
		34 Lalande 21014 . .	7.5	3	III–VII	35 0 0.8	5.0	6.5	12.1	3.6	57.5	4.25	34.758	. .	34.041
		35 Lalande 21185 . .	. .	3	III–VII	22 5 5.9	9.8	11.4	18.0	9.4	3.9	9.73	31.470	. .	30.750
		36 Lacaille 4646. . .	. .	3	III–VII	84 40 0.0	4.5	6.8	10.9	3.5	57.9	3.93	33.712	. .	33.004
		37 Weisse (2) XI, 266 .	8.0	3	V–IX	23 10 1.0	5.1	5.0	10.9	3.1	57.0	3.68	29.691	. .	28.963
		38 Lacaille 4758. . .	6.5	3	III–VII	86 10 5.8	8.9	12.4	19.2	10.0	2.9	9.87	27.769	. .	27.061
		39 Nadir	. .	.	. .	200 0 2.8	8.1	7.2	15.9	4.6	1.3	6.65	30.776	. .	. .
	6	40 Nadir	. .	.	. .	199 55 5.7	2.5	4.2	5.7	7.2	4.4	4.95	30.275	. .	. .
		41 Nadir	. .	.	. .	199 59 59.0	58.4	58.6	62.4	62.2	59.2	59.97	30.694	. .	. .
		42 Nadir	. .	.	. .	200 5 0.0	1.6	0.6	4.3	3.8	0.3	1.77	40.328	. .	. .
		43 Nadir	. .	.	. .	200 5 0.0	0.9	0.2	5.1	3.8	0.4	1.73	40.325	. .	. .
		44 Nadir	. .	.	. .	200 0 0.0	59.8	59.7	4.9	3.7	0.1	1.37	30.741	. .	. .
		45 Nadir	. .	.	. .	199 55 1.4	3.2	1.8	6.4	5.8	2.1	3.45	20.246	. .	. .
	21	46 Anon. $8^h\ 57^m\ 19^s$.	. .	3	V–IX	97 45 3.9	3.2	4.0	8.0	6.2	1.2	4.42	32.798	−0.711	32.104
		47 Anon. $9^h\ 17^m\ 47^s$.	6.0	1	IX	93 50 1.2	0.7	1.2	4.2	4.2	58.7	1.70	31.733	. .	31.056
		48 B. A. C. 7504, S. P. .	. .	1	5	325 25 3.1	59.1	4.3	3.8	4.9	0.0	2.53	30.107	. .	29.399
		49 11 Cephei, S. P. . .	5.0	3	IV–VI	309 40 5.4	3.0	6.8	5.2	5.7	2.0	4.68	31.078	. .	30.375
		50 O. Arg. S. 10227. .	9.0	3	III–VII	86 45 1.4	1.8	4.2	7.8	4.2	0.8	3.37	29.161	. .	28.455
		51 O. Arg. S. 10241. .	8.8	2	VII, IX	" " "	"	"	"	"	"	"	24.924	. .	24.230
		52 Anon. $10^h\ 6^m\ 43^s$.	. .	3	III–VII	96 25 5.8	7.3	9.1	11.2	9.7	3.9	7.83	35.389	. .	34.685
		53 Weisse X, 468 . .	9.0	3	III–VII	46 5 4.4	5.6	7.3	9.9	8.9	3.1	6.53	34.131	. .	33.418
		54 Lacaille 4437. . .	6.5	3	III–VII	95 5 2.8	1.6	4.9	8.2	5.2	59.4	3.68	28.150	. .	27.446
		55 Weisse (2) X, 944 .	7.5	3	III–VII	21 25 3.0	3.4	5.0	8.8	7.2	1.9	4.88	25.696	. .	24.978
		56 Weisse X, 957 . .	7.8	3	III–VII	54 30 6.1	6.1	7.1	10.1	7.8	2.8	6.67	34.572	. .	33.860
		57 Anon. $11^h\ 1^m\ 13^s$.	7.5	3	III–VII	91 45 1.7	4.0	4.2	7.2	5.4	0.2	3.78	33.938	. .	33.233
		58 Anon. $11^h\ 9^m\ 17^s$.	8.5	3	IV–VI	359 30 4.2	4.9	9.7	12.1	6.6	3.8	6.88	27.978	. .	27.262
		59 Rumker 3575 . .	9.5	3	III–VII	40 20 0.9	1.2	2.4	5.9	2.4	0.4	2.20	30.157	. .	29.443
		60 Weisse XI, 495 . .	9.0	3	III–VII	50 50 5.1	6.1	8.8	11.7	10.1	oblit.	7.98	30.178	. .	29.466
		61 Lacaille 4867. . .	7.0	2	VII, IX	87 55 1.2	1.2	1.8	5.6	2.3	58.9	1.83	31.860	. .	31.166
		62 B. A. C. 4015 . .	5.0	3	III–VII	92 5 4.2	6.2	7.6	10.8	6.8	2.2	6.30	34.111	. .	33.406
		63 B. A. C. 4128 . .	6.0	3	V–IX	25 5 5.1	6.1	7.8	11.8	6.2	2.9	6.65	25.858	. .	25.133
		64 Nadir	. .	.	. .	199 59 58.9	60.6	61.9	66.8	61.5	59.9	61.60	30.610	−0.711	. .

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1874.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	29.882	45.0	39.7	− 2 20.5	S. 26 17 47.0	29.3	+ 12 35 22.5	− 2.0	Y.	
2	. .	. .	. .	− 1 8.7	31 43 56.3	36.7	+ 7 9 5.8	+ 0.1	Y.	
3	. .	. .	. .	− 1 58.2	31 43 6.7	36.7	+ 7 9 55.4	+ 0.1	Y.	
4	. .	. .	. .	+ 40.7	27 15 44.4	30.6	+ 11 37 23.8	− 1.0	Y.	
5	. .	. .	. .	+ 53.2	27 15 56.9	30.6	+ 11 37 11.3	− 1.0	Y.	
6	29.878	44.5	38.8	− 2 7.3	16 42 55.7	17.8	+ 22 10 25.3	− 4.1	Y.	
7	. .	. .	. .	− 1 13.0	77 43 52.4	4 26.9	− 38 54 40.5	+ 11.5	Y.	
8	. .	. .	. .	− 3 2.4	67 27 2.4	2 22.1	− 28 35 45.7	+ 9.8	Y.	
9	29.880	44.2	38.7	+ 2 33.4	S. 67 32 38.3	2 22.8	− 28 41 22.3	+ 10.0	Y.	
10	. .	. .	. .	+ 1 39.5	N. 39 48 13.8	49.5	+ 78 42 42.1	− 16.9	Y.	
11	29.868	44.0	38.4	− 9.9	25 20 0.4	28.1	+ 64 14 7.3	− 13.4	Y.	
12	. .	. .	. .	+ 2 2.4	N. 67 57 51.1	2 25.8	+ 73 6 4.3	+ 18.8	Y.	
13	. .	. .	. .	+ 1 22.9	S. 17 56 22.3	19.3	+ 20 56 57.2	− 0.3	Y.	
14	. .	. .	. .	+ 18.6	S. 26 35 27.5	29.8	+ 12 17 41.5	+ 2.3	Y.	
15	29.860	43.3	37.5	+ 2 11.9	N. 26 2 39.8	29.1	+ 64 56 47.7	− 9.7	Y.	
16	. .	. .	. .	− 30.2	S. 0 19 36.5	0.3	+ 38 34 2.0	− 2.8	Y.	
17	. .	. .	. .	+ 1 5.3	75 6 16.7	3 40.3	− 36 16 18.2	+ 10.9	Y.	
18	. .	. .	. .	. .		. .		. .	Y.	
19	30.164	45.0	34.0	− 40.6	18 39 27.0	20.4	+ 20 13 51.4	− 5.6	Y.	
20	30.156	42.2	33.8	− 2 25.9	25 42 40.8	29.2	+ 13 10 28.8	− 2.1	Y.	
21	. .	. .	. .	− 2 58.7	69 42 13.8	2 42.5	− 30 51 17.5	+ 10.2	Y.	
22	. .	. .	. .	+ 1 24.1	41 1 30.4	53.7	− 2 8 44.3	+ 3.1	Y.	
23	. .	. .	. .	+ 1 22.6	41 1 28.9	52.7	− 2 8 42.8	+ 3.1	Y.	
24	30.176	42.0	32.8	+ 31.6	71 0 35.3	2 54.8	− 32 9 51.3	+ 10.5	Y.	
25	. .	. .	. .	− 2 48.2	17 22 19.4	19.0	+ 21 31 0.4	− 3.6	Y.	
26	. .	. .	. .	− 2 3.4	S. 3 58 1.2	4.2	+ 34 55 33.4	− 7.2	Y.	
27	30.180	41.2	32.2	+ 57.9	N. 31 28 55.7	37.2	+ 70 23 11.7	− 16.2	Y.	
28	30.180	40.2	32.0	− 6.5	N. 70 19 58.4	2 48.7	+ 70 43 34.1	+ 20 2	Y.	
29	. .	. .	. .	− 1 49.7	S. 20 53 20.5	23.2	+ 17 59 55.1	− 0.4	Y.	
30	30.190	39.8	31.2	+ 11.4	74 55 12.5	3 42.9	− 36 5 16.6	+ 11.4	Y.	
31	. .	. .	. .	+ 2 14.5	61 52 18.8	1 53.6	− 23 0 33.6	+ 9.4	Y.	
32	. .	. .	. .	− 27.2	0 19 37.8	0.3	+ 38 34 0.7	− 3.2	Y.	
33	30.192	39.5	30.7	+ 1 6.7	75 6 12.2	3 45.9	− 36 16 19.3	+ 11.3	Y.	
34	. .	. .	. .	− 2 6.6	14 57 57.6	16.3	+ 23 55 24.9	+ 1.5	Y.	
35	. .	. .	. .	− 23.5	2 4 46.2	2.2	+ 36 48 50.4	− 0.9	Y.	
36	30.206	39.2	30.2	− 1 34.1	64 38 29.8	2 8.2	− 25 46 59.2	+ 10.3	Y.	
37	. .	. .	. .	+ 32.5	3 10 36.2	3.4	+ 35 42 59.2	+ 0.8	Y.	
38	30.196	39.0	29.5	+ 1 32.1	66 11 42.0	2 17.9	− 27 20 21.1	+ 10.5	Y.	
39	. .	. .	. .	. .		. .		. .	Y.	
40	. .	. .	. .	. .		. .		. .	Y.	
41	. .	. .	. .	. .		. .		. .	Y.	
42	. .	. .	. .	. .		. .		. .	Y.	
43	. .	. .	. .	. .		. .		. .	Y.	
44	. .	. .	. .	. .		. .		. .	Y.	
45	. .	. .	. .	. .		. .		. .	Y.	
46	30.040	55.7	51.2	− 1 5.9	77 43 58.5	4 21.4	− 38 54 41.1	+ 12.9	Y.	
47	. .	. .	. .	− 33.1	S. 73 49 28.6	3 18.0	− 34 59 7.8	+ 12.6	Y.	Saw no other.
48	30.030	55.5	50.6	+ 18.8	N. 54 34 38.7	1 21.7	+ 86 30 20.8	+ 22.0	Y.	
49	30.030	55.2	50.2	− 11.7	N. 70 20 7.1	2 41.7	+ 70 43 32.4	+ 22.2	Y.	
50	. .	. .	. .	+ 48.4	S. 66 45 51.8	2 15.0	− 27 54 28.0	+ 11.7	Y.	
51	. .	. .	. .	+ 3 0.8	66 48 4.2	2 15.3	− 27 56 40.7	+ 11.7	Y.	
52	. .	. .	49.8	− 2 26.8	76 22 41.0	3 56.4	− 37 32 58.6	+ 13.7	Y.	
53	. .	. .	. .	− 1 47.1	26 3 19.4	28.6	+ 12 49 50.8	+ 1.8	Y.	
54	30.050	54.2	48.4	+ 1 20.1	75 6 23.7	3 36.6	− 36 16 21.5	+ 13.8	Y.	
55	. .	. .	. .	+ 2 37.4	1 27 42.3	1.5	+ 37 25 55.0	− 4.5	Y.	
56	. .	. .	. .	− 2 1.0	34 28 5.7	41.7	+ 4 24 51.4	+ 5.2	Y.	
57	. .	. .	. .	− 1 41.3	S. 71 43 22.4	2 55.7	− 32 52 39.3	+ 13.7	Y.	
58	. .	. .	. .	+ 1 25.8	N. 20 28 27.3	21.9	+ 59 22 28.0	− 8.5	Y.	
59	. .	. .	. .	+ 17.4	S. 20 20 19.6	21.8	+ 18 32 57.4	+ 2.7	Y.	
60	30.060	53.5	47.2	+ 16.7	30 50 24.7	35.0	+ 8 2 39.1	+ 5.8	Y.	−1″.19 applied to mean of B, C, D, and E.
61	. .	. .	. .	− 36.5	67 54 25.3	2 23.7	− 29 3 10.2	+ 13.0	Y.	
62	30.072	53.0	46.8	− 1 46.7	72 3 19.6	2 59.5	− 33 12 40.3	+ 13.5	Y.	
63	. .	. .	. .	+ 2 32.6	S. 5 7 39.2	5.3	+ 33 45 54.3	+ 2.2	Y.	
64	. .	. .	. .	. .		. .		. .	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES. A.			B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
						°	′	″	″	″	″	″	″	″	r.	r.	r.
1874.																	
Apr. 29	1	Weisse (2) IX, 1038.	. .	3	III–VII	29	45	3.0	3.8	7.0	12.1	4.8	0.6	5.22	33.037	−0.720	32.312
	2	B. A. C. 3630 . .	. .	3	III–VII	97	45	3.0	4.1	7.2	10.1	3.1	59.2	4.45	32.483	. .	31.771
	3	Weisse (2) X, 776 .	8.5	3	V–IX	22	35	5.2	7.7	10.9	15.1	7.0	3.1	8.17	30.084	. .	29.349
	4	O. Arg. S. 10952. .	7.5	3	III–VII	88	15	5.0	6.9	9.5	14.1	5.7	1.9	7.18	27.229	. .	26.514
	5	Anon. $11^h\ 2^m\ 5^s$. .	8.0	3	III–VII	99	5	5.8	9.3	10.7	15.4	7.8	1.8	8.47	32.669	. .	31.957
	6	B. A. C. 3917 . .	6.5	3	III–VII	55	5	4.4	6.6	10.2	15.1	7.6	2.1	7.67	25.993	. .	25.272
	7	Lacaille 4867. . .	6.0	3	III–VII	87	55	3.1	6.1	7.8	13.2	4.8	0.8	5.97	31.990	. .	31.275
	8	B. A. C. 4015 . .	5.0	3	III–VII	92	5	6.1	10.4	12.2	16.2	8.5	2.6	9.33	34.304	. .	33.590
	9	Weisse (2) XII, 1190	8.5	3	III–VII	21	10	3.2	4.1	5.9	11.4	3.5	59.6	4.62	29.643	. .	28.916
	10	Anon. $12^h\ 13^m\ 29^s$..	7.5	3	III–VII	86	40	3.8	6.1	9.8	15.1	5.2	1.2	6.87	28.913	. .	28.198
	11	O. Arg. S. 12219. .	6.5	3	III–VII	89	10	3.8	5.8	7.8	13.0	5.2	0.3	5.98	33.917	. .	33.203
	12	O. Arg. S. 12238. .	6.5	3	III–VII	86	5	2.1	3.5	7.1	13.2	3.9	58.5	4.72	31.626	. .	30.911
	13	Lalande 23896 . .	8.3	3	III–VII	21	50	2.7	4.1	7.8	12.9	3.5	59.1	5.02	27.403	. .	26.676
	14	Lacaille 5342. . .	7.0	3	III–VII	97	5	4.7	7.2	10.8	15.7	6.5	0.9	7.63	33.359	. .	32.647
	15	O. Arg. S. 12687 .	8.0	3	III–VII	82	5	4.1	6.6	9.2	14.8	5.7	1.1	6.92	31.094	. .	33.378
	16	Lalande 24615 . .	6.5	3	V–IX	22	45	5.4	6.4	10.2	14.2	7.1	1.7	7.50	27.333	−0.720	26.598
	17	Moon N.	. .	3	III–VII	67	9	58.8	63.1	65.1	69.8	61.7	55.2	62.28	25.118	−0.422	24.697
	18	Centauri	5.0	3	III–VII	91	15	3.1	5.7	7.8	12.4	3.1	58.1	5.03	30.303	−0.720	29.589
	19	Rumker 4483 . .	8.5	3	V–IX	46	40	4.7	5.3	8.1	13.9	5.2	0.7	6.32	29.915	. .	28.200
	20	Anon. $13^h\ 54^m\ 57^s$.	7.0	3	III–VII	94	25	2.4	4.4	7.1	11.3	3.9	58.3	4.57	31.841	. .	31.128
	21	Nadir	. .	.	. .	199	59	56.7	60.1	62.2	68.9	57.8	55.9	60.27	30.580	. .	. .
May 6	22	Anon. $13^h\ 51^m\ 33^s$.	9.0	3	V–IX	96	0	2.2	2.3	3.9	6.4	5.2	59.3	3.22	30.770	−0.644	30.142
	23	Lacaille 5872. . .	7.0	3	III–VII	91	30	4.2	3.9	6.9	9.1	7.9	1.9	5.65	30.355	. .	29.717
	24	Lacaille 5883. . .	6.5	3	III–VII	"	"	"	"	"	"	"	"	"	32.498	. .	31.860
	25	Weisse XIV, 316 .	8.5	3	III–VII	72	25	6.0	3.9	8.0	12.5	9.4	4.4	7.37	33.760	. .	33.118
	26	B. A. C. 4816 . .	7.0	3	III–VII	21	25	5.1	3.1	6.4	9.2	9.2	4.0	6.17	35.196	. .	34.545
	27	Weisse (2) XIV, 752	7.2	3	III–VII	20	15	2.9	1.1	6.5	7.9	6.2	0.5	4.18	35.282	. .	34.630
	28	Weisse (2) XIV, 936	8.0	2	VII, IX	22	15	3.1	0.7	5.1	7.1	5.8	0.2	3.67	24.938	. .	24.271
	29	O. Arg. N. 14996 .	8.2	3	IV–VI	359	0	4.0	0.4	7.5	9.8	6.2	0.2	4.68	29.006	. .	28.357
	30	Lalande 27803 . .	8.0	3	III–VII	23	30	2.7	0.2	4.1	6.6	4.8	59.4	2.97	25.858	. .	25.207
	31	O. Arg. S. 14487 . .	. .	2	VII, IX	88	50	7.4	8.2	8.8	14.3	11.4	5.9	9.33	36.981	. .	36.354
	32	B. A. C. 5117 . .	7.0	3	III–VII	83	35	5.2	6.0	7.9	12.7	7.8	3.2	7.13	34.933	. .	34.293
	33	Weisse (2) XV, 862 .	7.2	3	III–VII	21	0	3.8	2.9	6.1	10.4	7.3	2.7	5.53	33.999	. .	33.349
	34	Lalande 28834 . .	8.0	3	III–VII	21	20	5.9	6.9	9.0	12.5	10.2	5.2	8.28	31.874	. .	31.223
	35	Weisse (2) XV, 1336	8.0	3	III–VII	"	"	"	"	"	"	"	"	"	32.181	. .	31.530
	36	Weisse XV, 1081 . .	. .	2	V, VII	52	30	0.4	58.8	2.8	6.7	3.1	0.0	1.97	32.338	. .	31.693
	37	Weisse XV, 1086 . .	. .	2	I, IX	"	"	"	"	"	"	"	"	"	27.499	. .	26.849
	38	Lalande 29654 . .	6.5	3	III–VII	20	30	1.6	0 8	4.7	7.3	4.5	59.2	3.02	30.195	. .	29.543
	39	Weisse (2) XVI, 616	7.7	3	III–VII	20	40	4.2	3.8	7.7	9.8	7.8	2.0	5.88	27.132	. .	26.480
	40	Weisse (2) XVI, 889	8.0	3	III–VII	23	10	1.2	1.8	2.9	7.1	3.5	58.2	2.45	34.471	. .	33.820
	41	Lalande 30419 . .	7.5	3	III–VII	21	19	59.3	59.5	62.9	66.7	63.2	57.9	61.58	34.960	. .	34.309
	42	Anon. $16^h\ 43^m\ 45^s$.	9.0	3	III–VII	89	0	5.1	6.3	8.8	12.3	8.7	4.2	7.57	29.807	. .	29.166
	43	Lalande 30851 . .	8.0	2	VII, IX	21	25	4.1	4.9	6.9	11.7	7.7	3.0	6.38	35.682	. .	35.013
	44	ϵ Ursæ Minoris . .	. .	3	I–5	336	40	3.9	2.3	7.2	8.2	5.8	1.0	4.73	30.104	. .	29.450
	45	Nadir	. .	.	. .	200	0	1.7	0.4	3.2	10.0	2.6	0.9	3.17	30.594	. .	. .
8	46	B. A. C. 175, S. P. .	. .	3	IV–VI	304	20	5.5	59.4	7.7	6 7	8.7	1.7	4.95	22.248	−0.668	21.580
	47	32 Camelopardi (1st *)	. .	1	V	334	50	5.0	0.2	7.0	5.8	7.8	2.2	4.67	34.103	. .	33.435
	48	32 Camelopardi (2d *)	. .	2	I, 5	"	"	"	"	"	"	"	"	"	33.491	. .	32.821
	49	Anon. $13^h\ 11^m\ 28^s$.	7.7	3	III–VII	25	45	3.8	59.8	4.2	4.8	4.1	0.9	2.93	32.174	. .	31.500
	50	Weisse (2) XIII, 437	. .	3	III–VII	21	55	7.3	5.0	7.8	11.2	9.7	6.4	7.90	29.315	. .	28.640
	51	Lacaille 5649. . .	. .	3	III–VII	92	10	5.7	4.0	7.1	10.6	7.8	4.6	6.63	27.837	. .	27.175
	52	π Virginis	7.0	3	III–VII	65	5	0.1	56.8	0.8	2.1	2.7	58.9	0.23	29.997	. .	29.330
	53	Rumker 4522 . .	7.5	3	III–VII	32	20	2.9	59.5	2.8	4.2	5.0	0.9	2.55	28.120	. .	27.447
	54	Weisse (2) XIV, 21 .	8.0	3	III–VII	21	35	5.2	3.1	6.7	7.9	8.8	5.1	6.13	35.037	. .	34.362
	55	Anon. $14^h\ 10^m\ 25^s$.	. .	3	III–VII	23	45	6.3	5.7	7.7	10.7	10.2	6.1	7.78	33.691	. .	33.016
	56	B. A. C. 4816 . .	6.0	3	III–VII	21	25	3.5	1.8	5.5	6.0	7.8	2.9	4.58	35.138	. .	34.463
	57	Weisse (2) XIV, 752	. .	3	III–VII	20	15	2.2	59.2	4.8	4.8	4.7	0.7	2.73	35.197	. .	34.521
	58	B. A. C. 896, S. P. .	5.5	3	IV½–V½	317	50	7.0	2.9	9.2	7.8	9.4	4.7	6.83	29.878	. .	29.213
	59	Lalande 27803 . .	8.2	3	III–VII	23	30	2.9	0.3	3.9	5.3	5.2	1.7	3.22	25.855	. .	25.180
	60	11 Ursæ Minoris . .	7.0	3	IV½–V½	346	35	1.9	56.2	4.1	2.5	2.8	59.2	1.12	25.853	. .	25.183
	61	ν^2 Ursæ Minoris . .	5.0	3	IV½–V½	"	"	"	"	"	"	"	"	"	25.965	. .	25.295
	62	Nadir	. .	.	. .	200	0	2.8	56.7	2.2	5.5	1.4	2.4	1.83	30.574	. .	. .
11	63	λ Draconis	. .	3	IV–VI	348	50	4.4	2.9	10.9	11.0	4.5	2.0	5.95	26.270	−0.720	25.541
	64	2 Draconis	6.0	3	IV–VI	"	"	"	"	"	"	"	"	"	25.986	. .	25.257
	65	B. A. C. 8273, S. P. .	. .	3	IV–VI	306	5	5.9	1.9	8.5	11.2	4.1	2.0	5.60	34.446	. .	33.733
	66	B. A. C. 8314, S. P. .	. .	2	V, V	312	40	0.8	56.6	5.2	3.9	59.5	56.3	0.38	34.033	. .	33.315
	67	B. A. C. 8355, S. P. .	. .	3	IV–VI	304	20	1.8	56.8	5.6	7.1	1.2	58.8	1.88	28.863	−0.720	28.140

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1874.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	29.940	48.8	41.0	− 1 12.5	S. 9 43 52.8	10.2	+ 29 9 35.8	− 5.8	Y.	
2	29.960	48.2	39.8	− 55.5	77 44 9.0	4 27.0	− 38 54 57.2	+ 15.1	Y.	
3	. .	. .	. .	+ 20.4	2 35 28.6	2.7	+ 36 18 7.5	− 5.6	Y.	
4	. .	. .	. .	+ 1 49.3	68 16 56.5	2 28.2	− 29 25 45.9	+ 13.6	Y.	
5	29.974	48.0	39.2	− 1 1.3	79 4 7.1	4 59.3	− 40 15 27.6	+ 15.6	Y.	
6	. .	. .	. .	+ 2 28.1	35 7 35.8	41.9	+ 3 45 21.1	+ 6.3	Y.	
7	29.984	47.3	38.4	− 40.0	67 54 26.0	2 25.9	− 29 3 13.1	+ 14.0	Y.	
8	. .	. .	. .	− 1 52.5	72 3 16.8	3 2.2	− 33 12 40.2	+ 14.6	Y.	
9	. .	. .	. .	+ 33.9	1 10 38.6	1.2	+ 37 42 59.0	− 0.6	Y.	
10	29.985	47.0	38.1	+ 56.5	66 41 3.3	2 17.6	− 27 49 42.1	+ 13.9	Y.	
11	. .	. .	. .	− 1 40.4	69 8 25.6	2 35.5	− 30 17 22.3	+ 14.2	Y.	
12	. .	. .	. .	− 28.5	66 4 36.2	2 13.8	− 27 13 11.2	+ 13.8	Y.	
13	. .	. .	. .	+ 1 44.2	1 51 49.2	1.9	+ 37 1 47.7	+ 2.5	Y.	A smaller star preceding.
14	29.990	46.3	37.7	− 1 23.0	77 3 44.7	4 14.7	− 38 14 20.6	+ 14.7	Y.	
15	. .	. .	. .	− 1 45.9	62 3 21.0	1 52.2	− 23 11 34.4	+ 13.4	Y.	
16	. .	. .	. .	+ 1 46.6	2 46 54.1	+ 2.9	+ 36 6 41.8	+ 4.7	Y.	
17	29.988	46.0	37.2	+ 2 46.2	47 12 48.5	−23 42.7	− 7 55 27.0	. .	Y.	North wire.
18	. .	. .	. .	+ 12.9	71 15 17.9	+ 2 54.6	− 32 24 33.7	+ 13.6	Y.	
19	. .	. .	. .	+ 53.6	26 40 59.9	30.1	+ 12 12 8.8	+ 10.4	Y.	
20	29.990	45.8	36.7	− 35.3	74 24 29.2	3 31.5	− 35 34 21.9	+ 13.3	Y.	
21	. .	. .	. .	. .		. .		. .	Y.	
22	29.908	57.0	50.0	− 4.4	75 59 58.8	3 48.7	− 37 10 8.7	+ 14.5	Y.	
23	. .	. .	. .	+ 8.8	71 30 14.5	2 51.8	− 32 39 27.5	+ 13.9	Y.	
24	. .	. .	50.1	− 58.3	71 29 7.4	2 51.6	− 32 38 20.2	+ 13.9	Y.	
25	. .	. .	. .	− 1 37.7	52 23 29.6	1 15.2	− 13 31 6.0	+ 13.0	Y.	
26	. .	. .	. .	− 2 22.4	1 22 43.7	1.4	+ 37 30 53.7	+ 8.6	Y.	
27	. .	. .	. .	− 2 25.1	0 12 39.1	0.2	+ 38 40 59.5	+ 9.0	Y.	
28	. .	. .	. .	+ 2 59.6	S. 2 18 3.2	2.3	+ 36 35 33.3	+ 9.7	Y.	Another star preceding to southward.
29	29.916	56.0	50.3	+ 51.5	N. 20 59 3.8	22.3	+ 59 53 4.9	+ 8.2	Y.	
30	. .	. .	. .	+ 2 30.2	S. 3 32 33.2	3.6	+ 35 21 2.0	+ 11.5	Y.	
31	29.910	55.5	50.3	− 3 19.1	68 46 50.2	2 28.4	− 29 55 39.8	+ 12.2	Y.	Another star following.
32	. .	. .	. .	− 2 14.6	63 32 52.6	: 56.2	− 24 41 10.0	+ 12.2	Y	
33	. .	. .	. .	− 1 45.0	0 58 20.6	1.0	+ 37 55 17.2	+ 13.1	Y.	
34	. .	. .	. .	− 38.3	1 19 30.0	1.3	+ 37 34 7.5	+ 13.5	Y.	
35	. .	. .	. .	− 48.0	1 19 20.3	1.3	+ 37 34 17.2	+ 14.2	Y.	
36	29.914	55.0	49.4	− 53.1	32 29 8.9	37.0	+ 6 23 52.9	+ 13.7	Y.	
37	. .	. .	. .	+ 1 38.7	32 31 40.7	37.1	+ 6 21 21.0	+ 13.7	Y.	
38	. .	. .	. .	+ 14.3	0 30 17.3	0.5	+ 38 23 21.0	+ 15.0	Y.	
39	. .	. .	. .	+ 1 50.3	0 41 56.2	0.7	+ 38 11 41.9	+ 15.7	Y.	
40	. .	. .	. .	− 1 59.7	3 8 2.7	3.2	+ 35 45 32.9	+ 16.1	Y.	
41	. .	. .	. .	− 2 15.0	1 17 46.5	1.3	+ 37 35 51.0	+ 16.5	Y.	
42	29.914	54.2	48.2	+ 26.0	69 0 33.6	2 30.8	− 30 9 25.6	+ 9.1	Y.	
43	. .	. .	. .	− 2 37.1	S. 1 22 29.3	1.4	+ 37 31 8.1	+ 17.2	Y.	
44	29.916	54.1	48.0	+ 16.9	N. 43 19 38.3	55.0	+ 82 14 12.1	+ 17.1	Y.	
45	. .	. .	. .	. .		. .		. .	Y.	
46	30.052	61.2	60.7	+ 4 23.7	75 35 31.4	3 38.5	+ 65 27 11.3	+ 10.5	Y.	
47	. .	. .	. .	− 1 47.7	45 11 43.0	57.5	+ 84 6 19.3	− 7.6	Y.	
48	30.050	61.2	60.4	− 1 28.4	N. 45 11 23.7	57.5	+ 84 6 0.0	− 7.6	Y.	
49	. .	. .	. .	− 47.0	S. 5 44 15.9	5.7	+ 33 9 17.2	+ 3.5	Y.	
50	. .	. .	. .	+ 42.6	1 55 50.5	1.9	+ 36 57 46.4	+ 3.5	Y.	
51	30.054	61.2	58.4	+ 1 28.5	72 11 35.2	2 56.7	− 33 20 53.1	+ 14.9	Y.	
52	. .	. .	. .	+ 21.0	45 5 21.2	57.5	− 6 12 39.9	+ 11.9	Y.	
53	. .	. .	. .	+ 1 20.0	12 21 22.6	12.6	+ 26 32 3.6	+ 7.2	Y.	
54	. .	. .	. .	− 2 16.7	1 32 49.4	1.6	+ 37 20 47.8	+ 6.3	Y.	
55	. .	. .	. .	− 1 34.5	3 43 33.2	3.8	+ 35 10 1.8	+ 7.1	Y.	
56	. .	. .	. .	− 2 19.9	1 22 44.7	1.4	+ 37 30 52.7	+ 8.0	Y.	
57	30.154	61.0	57.4	− 2 21.7	S. 0 12 41.0	0.2	+ 38 40 57.6	+ 8.4	Y.	
58	. .	. .	57.4	+ 24.7	N. 62 9 28.5	1 48.8	+ 78 55 3.9	− 3.0	Y.	
59	. .	. .	. .	+ 2 31.1	S. 3 32 34.3	3.6	+ 35 21 0.9	+ 10.9	Y.	
60	. .	. .	. .	+ 2 31.0	N. 33 22 27.9	38.0	+ 72 16 44.7	+ 8.5	Y.	
61	30.150	60.5	57.2	+ 2 27.4	33 22 31.4	38.0	+ 72 16 48.2	+ 8.8	Y.	
62	. .	. .	. .	. .		. .		. .	Y.	
63	. .	. .	. .	+ 2 19.7	31 7 34.3	35.3	+ 70 1 48.4	− 13.0	Y.	
64	30.364	62.5	53.4	+ 2 28.6	31 7 25.4	35.3	+ 70 1 39.5	− 12.7	Y.	
65	. .	. .	. .	− 1 57.0	73 56 51.4	3 20.8	+ 67 6 9.0	+ 15.1	Y.	
66	. .	. .	. .	− 1 43.9	67 21 43.5	2 19.6	+ 73 42 18.1	+ 14.7	Y.	
67	. .	. .	. .	+ 58.0	N. 75 39 0.1	3 45.2	+ 65 23 35.9	+ 14.0	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES. A.			B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
						°	′	″	″	″	″	″	″	″	r.	r.	r.
1874. May 11	1	B. A. C. 4150 . .	. .	3	I–5	331	45	3.6	1.9	9.1	10.3	3.2	1.2	4.88	28.270	−0.720	27.547
	2	16 Cassiopeæ, S. P. .	. .	3	IV–VI	305	0	4.7	0.4	8.4	11.8	2.8	1.1	4.87	30.204	. .	29.491
	3	B. A. C. 175, S. P. .	. .	3	IV–VI	304	25	4.0	0.0	7.2	10.3	2.7	0.4	4.10	31.656	. .	30.942
	4	B. A. C. 225, S. P. .	. .	3	I–5	321	55	3.8	1.0	7.6	10.5	2.7	59.3	4.15	28.185	. .	27.466
	5	Anon. $12^h\ 53^m\ 42^s$.	8.0	3	IV–VI	349	30	7.8	6.4	14.4	17.0	7.8	3.2	9.43	29.290	. .	28.562
	6	Anon. $13^h\ 11^m\ 27^s$.	8.0	3	III–VII	25	45	4.7	5.4	8.9	12.4	2.5	1.9	5.93	32.366	. .	31.640
	7	38 Cassiopeæ, S. P. .	. .	3	IV–VI	308	35	3.1	2.5	8.9	9.0	2.2	58.9	4.10	34.028	. .	33.316
	8	B. A. C. 4593 . .	. .	3	III–VII	65	0	3.6	1.7	7.9	12.8	1.7	59.5	4.53	36.029	. .	35.310
	9	50 Cassiopeæ, S. P. .	. .	3	IV–VI	310	45	2.9	1.2	6.9	9.8	0.2	58.0	3.17	31.257	. .	30.546
	10	B. A. C. 4714 . .	6.0	3	III–VII	26	0	6.1	5.9	9.8	14.7	3.9	2.0	7.07	30.304	. .	29.578
	11	O. Arg. N. 14432 .	9.0	3	IV–VI	6	55	2.0	2.4	5.9	11.8	0.1	58.7	3.48	28.124	. .	27.400
	12	5 Ursæ Minoris . .	. .	3	IV½–V½	342	40	0.3	59.8	6.2	8.6	59.7	56.1	1.78	32.565	. .	31.842
	13	B. A. C. 814, S. P. .	. .	3	IV–VI	306	15	5.4	4.8	8.4	13.7	3.6	1.1	6.17	32.370	. .	31.657
	14	B. A. C. 896, S. P. .	. .	3	IV½–V½	317	50	3.5	2.8	8.8	11.0	2.5	0.1	4.78	29.749	. .	29.032
	15	B. A. C. 960, S. P. .	5.5	3	I–5	323	20	4.3	4.8	11.2	15.8	4.2	2.1	7.07	25.750	. .	25.031
	16	11 Ursæ Minoris . .	. .	3	IV–VI	346	35	5.7	6.2	12.5	16.6	4.9	3.0	8.15	26.109	. .	25.380
	17	γ^2 Ursæ Majoris . .	. .	3	IV–VI	"	"	"	"	"	"	"	"	"	26.254	. .	25.525
	18	Nadir	. .	.	. . .	200	0	1.1	2.8	4.8	13.2	58.8	59.2	3.32	30.677	. .	. .
18	19	2 Draconis	. .	3	IV–VI	348	50	2.2	57.8	7.7	3.9	3.8	54.3	1.62	25.831	−0.672	25.151
	20	B. A. C. 8273, S. P. .	. .	3	IV½–V½	306	5	5.8	0.2	8.9	5.8	6.1	58.3	4.18	34.485	. .	33.815
	21	B. A. C. 4036 . .	6.5	3	IV–VI	356	40	3.4	59.3	10.2	5.7	5.4	oblit.	3.65	33.143	. .	32.465
	22	B. A. C. 4070 . .	. .	3	I–5	332	34	60.4	53.2	66.8	60.7	62.3	51.1	59.08	26.220	. .	25.546
	23	B. A. C. 4165 . .	. .	3	2–4	330	30	3.7	57.7	8.8	4.8	4.1	55.2	2.38	29.485	. .	28.812
	24	B. A. C. 175, S. P. .	. .	3	IV–VI	304	25	3.1	56.1	7.7	3.8	3.8	55.1	1.60	31.769	. .	31.103
	25	7 Draconis	. .	3	IV–VI	351	25	4.4	0.9	11.2	5.8	6.2	56.3	4.13	30.178	. .	29.499
	26	32 Camelopardi (1st *)	. .	2	I, 5	334	50	5.9	1.1	11.9	7.8	7.9	58.2	5.47	34.165	. .	33.491
	27	32 Camelopardi (2d *)	. .	1	V	"	"	"	"	"	"	"	"	"	33.588	. .	32.916
	28	Weisse 1038 . . .	9.0	3	III–VII	45	55	7.6	5.0	13.7	10.9	10.1	59.9	7.87	28.268	. .	27.594
	29	Lalande 24615 . .	7.0	3	III–VII	22	45	6.1	5.5	12.7	9.4	9.6	59.9	7.20	27.370	. .	26.691
	30	38 Cassiopeæ, S. P. .	. .	3	IV–VI	308	35	3.3	57.2	8.5	1.9	2.7	54.1	1.12	34.046	. .	33.382
	31	Anon. $13^h\ 29^m\ 2^s$.	9.0	2	III–VII	51	40	2.4	0.1	7.7	6.1	4.5	56.2	2.83	29.222	. .	28.548
	32	Weisse (2) XIII, 854	8.3	3	III–VII	25	0	3.8	1.8	9.7	7.9	4.8	57.0	4.17	36.055	. .	35.377
	33	50 Cassiopeæ, S. P. .	. .	3	IV–VI	310	45	7.6	4.6	13.6	8.9	8.8	58.8	7.05	31.537	. .	30.874
	34	α Draconis . . .	. .	3	IV–VI	353	55	7.9	5.8	16.0	11.8	10.2	1.0	8.78	30.255	. .	29.577
	35	Anon. $14^h\ 10^m\ 28^s$.	8.0	3	III–VII	23	45	1.2	59.4	5.2	4.0	2.0	53.2	0.83	33.615	. .	32.936
	36	5 Ursæ Minoris . .	. .	3	IV½–V½	342	40	1.9	58.0	8.8	2.0	3.8	52.9	1.23	32.633	. .	31.958
	37	B. A. C. 814, S. P. .	. .	3	IV–VI	306	15	3.0	57.3	7.3	4.8	1.8	54.0	1.37	32.434	. .	31.769
	38	Anon. $14^h\ 44^m\ 50^s$.	8.5	3	III–VII	21	45	5.2	4.2	11.2	8.3	9.3	58.4	6.10	27.629	. .	26.950
	39	β Ursæ Minoris . .	. .	3	IV–VI	344	15	8.8	6.2	15.9	13.3	12.1	2.0	9.72	32.629	. .	31.946
	40	B. A. C. 966, S. P. .	6.0	3	I–5	323	20	7.5	3.8	16.3	9.4	9.2	0.1	7.72	25.859	. .	25.188
	41	O. Arg. S. 14435 .	9.0	3	III–VII	89	15	7.2	6.7	14.0	12.5	8.2	0.1	8.12	34.842	. .	34.176
	42	γ^2 Ursæ Majoris . .	. .	2	V, V½	346	35	2.2	57.1	9.7	3.5	2.4	53.9	1.47	26.066	. .	25.392
	43	B. A. C. 1061, S. P. .	. .	3	I–5	325	10	2.6	58.1	8.5	3.6	2.7	54.1	1.60	31.159	. .	30.489
	44	Nadir	. .	.	. .	199	59	59.5	56.7	64.8	64.1	58.7	54.2	59.67	30.511	. .	. .
19	45	B. A. C. 3864 . .	. .	3	IV–VI	153	55	3.0	56.5	8.1	2.1	6.2	4.8	3.45	35.194	−0.679	34.509
	46	B. A. C. 3906 . .	. .	3	IV½–V½	337	5	4.4	57.4	8.9	2.1	6.4	5.1	4.05	30.783	. .	30.099
	47	3 Draconis	5.5	3	IV–VI	351	25	2.9	55.7	8.7	1.2	4.8	3.1	2.73	26.100	. .	25.414
	48	B. A. C. 8273, S. P. .	. .	3	IV–VI	306	5	4.7	56.7	7.0	2.4	5.4	4.6	3.47	34.483	. .	33.811
	49	B. A. C. 4036 . .	. .	3	IV–VI	356	40	0.3	55.9	6.0	0.8	3.1	oblit.	1.81	33.052	. .	32.367
	50	B. A. C. 8355, S. P. .	. .	2	V½, VI	304	20	2.8	53.2	6.5	59.8	4.4	2.4	1.52	29.022	. .	28.349
	51	B. A. C. 4128 . .	6.0	3	III–VII	25	5	6.1	0.2	9.2	5.1	6.8	6.2	5.60	25.890	. .	25.205
	52	O. Arg. S. 12219. .	7.0	3	III–VII	89	10	7.8	4.1	10.9	7.8	9.3	9.9	8.30	33.773	. .	33.100
	53	O. Arg. S. 12338. .	6.5	3	III–VII	86	5	7.9	3.1	11.2	9.0	10.4	9.7	8.55	31.462	. .	30.788
	54	Lalande 23896 . .	8.2	3	III–VII	21	50	2.2	57.1	5.9	0.5	4.9	4.1	2.45	27.404	. .	26.718
	55	32 Camelopardi (1st *)	. .	2	I, 5	334	50	5.9	58.8	10.7	4.7	8.5	6.4	5.83	34.167	. .	33.486
	56	32 Camelopardi (2d *)	. .	2	V, VI	"	"	"	"	"	"	"	"	"	33.607	. .	32.926
	57	O. Arg. S. 12687 .	8.0	3	III–VII	82	5	2.8	58.0	5.9	2.0	3.8	3.6	2.68	33.724	. .	33.049
	58	Anon. $13^h\ 14^m\ 9^s$.	8.5	3	III–VII	46	0	6.4	1.8	10.9	5.9	9.8	8.0	7.13	33.560	. .	32.879
	59	Weisse (2) XIII, 437	. .	3	III–VII	21	55	1.2	56.9	4.8	1.5	3.8	3.0	1.87	29.176	. .	28.490
	60	B. A. C. 494, S. P. .	. .	3	I–5	325	15	2.2	56.4	7.1	0.0	5.7	3.8	2.53	33.822	. .	33.145
	61	ϵ Cassiopeæ, S. P. .	. .	3	IV–VI	302	0	3.8	56.2	6.7	1.5	3.7	1.9	2.30	29.189	. .	28.516
	62	50 Cassiopeæ, S. P. .	. .	3	IV–VI	310	45	5.8	0.2	9.9	4.7	7.2	4.7	5.42	31.450	. .	30.780
	63	Nadir	. .	.	. .	200	0	2.5	57.7	5.2	5.0	2.7	5.5	3.10	30.629	. .	. .
21	64	λ Draconis	. .	3	IV–VI	348	50	4.2	0.2	10.8	5.8	8.3	6.1	5.90	26.251	−0.673	25.570
	65	2 Draconis	. .	3	IV–VI	"	"	"	"	"	"	"	"	"	25.967	−0.673	25.286

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1874.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	+ 1 16.9	N. 48 13 38.2	1 5.6	+ 87 8 22.6	— 11.6	Y.	
2	30.400	60.0	52.2	+ 16.0	74 59 39.2	3 35.8	+ 66 3 6.2	+ 11.5	Y.	
3	. .	. .	. .	— 29.5	75 35 25.4	3 45.0	+ 65 27 10.8	+ 10.8	Y.	
4	. .	. .	. .	+ 1 19.4	58 3 36.4	1 34.1	+ 83 1 10.7	+ 9.7	Y.	
5	. .	. .	. .	+ 45.1	N. 30 29 5.5	34.6	+ 69 23 18.9	— 5.6	Y.	
6	. .	. .	. .	— 51.4	S. 5 44 14.5	5.9	+ 33 9 18.4	+ 3.0	Y.	
7	30.398	58.2	51.0	— 1 43.9	N. 71 26 39.8	2 53.7	+ 69 36 47.7	+ 6.6	Y.	Faint.
8	. .	. .	. .	— 2 46.4	S. 44 57 18.1	58.8	— 6 4 38.1	+ 11.8	Y.	
9	30.404	57.2	50.2	— 17.1	N. 69 15 13.9	2 34.5	+ 71 48 32.8	+ 3.6	Y.	
10	. .	. .	. .	+ 13.2	S. 6 0 20.3	6.2	+ 32 53 12.3	+ 6.6	Y.	
11	. .	. .	. .	+ 1 21.5	N. 13 3 35.0	13.7	+ 51 57 27.5	+ 4.0	Y.	Following a larger star.
12	30.394	56.2	49.5	— 57.7	37 20 55.9	45.0	+ 76 15 19.7	+ 2.4	Y.	
13	. .	. .	. .	— 51.9	73 45 45.8	3 20.1	+ 67 17 15.3	— 0.1	Y.	
14	. .	. .	. .	+ 30.3	62 9 24.9	1 51.5	+ 78 55 4.8	— 2.3	Y.	
15	. .	. .	. .	+ 2 35.7	56 37 17.2	1 29.6	+ 84 27 34.4	— 4.0	Y.	
16	. .	. .	. .	+ 2 24.8	33 22 27.1	39.0	+ 72 16 44.9	+ 7.6	Y.	
17	30.400	55.0	48.4	+ 2 20.2	33 22 31.6	39.0	+ 72 16 49.4	+ 7.9	Y.	
18	. .	. .	. .	. .		. .		. .	Y.	
19	29.968	63.2	57.8	+ 2 32.0	31 7 26.4	34.6	+ 70 1 39.8	— 13.6	Y.	
20	. .	. .	. .	— 1 59.6	73 56 55.4	3 16.5	+ 67 6 9.3	+ 15.5	Y.	
21	29.976	63.2	57.2	— 1 17.3	23 21 13.6	24.8	+ 62 15 17.2	— 10.6	Y.	—1″.47 applied to mean of B, C, D, and E.
22	. .	. .	. .	+ 2 19.6	47 22 41.3	1 2.3	+ 86 17 22.4	— 13.8	Y.	
23	29.986	63.0	56.3	+ 37.2	49 29 20.4	1 7.2	+ 88 24 6.4	— 12.7	Y.	
24	. .	. .	. .	— 34.6	75 35 33.0	3 40.2	+ 65 27 8.0	+ 11.6	Y.	
25	. .	. .	. .	+ 15.7	28 34 40.2	31.4	+ 67 28 50.4	— 7.7	Y.	
26	. .	. .	. .	— 1 49.4	45 11 44.0	58.0	+ 84 6 20.8	— 9.5	Y.	
27	20.996	62.8	55.2	— 1 31.4	N. 45 11 25.9	58.0	+ 84 6 2.7	— 9.5	Y.	
28	. .	. .	. .	+ 1 15.4	S. 25 56 23.3	28.0	+ 12 56 47.5	+ 6.2	Y.	
29	. .	. .	. .	+ 1 43.7	S. 2 46 50.9	2.8	+ 36 6 45.1	+ 0.9	Y.	
30	29.996	62.0	54.3	— 1 46.0	N. 71 26 44.9	2 50.2	+ 69 36 46.1	+ 7.7	Y.	
31	. .	. .	. .	+ 45.5	S. 31 40 48.3	35.6	+ 7 12 14.9	+ 8.6	Y.	
32	. .	. .	. .	— 2 48.5	S. 4 57 15.7	5.0	+ 33 56 18.1	+ 3.4	Y.	
33	30.000	61.8	53.7	— 27.4	N. 69 15 20.3	2 31.4	+ 71 48 29.5	+ 4.9	Y.	
34	. .	. .	. .	+ 13.2	N. 26 4 38.0	28.3	+ 64 58 45.1	— 0.6	Y.	
35	. .	. .	. .	— 1 32.0	S. 3 43 28.8	3.8	+ 35 10 6.2	+ 5.0	Y.	
36	. .	. .	. .	— 1 1.4	N. 37 21 0.1	44.1	+ 76 15 23.0	+ 0.5	Y.	
37	30.000	61.0	53.0	— 55.4	N. 73 45 54.1	3 16.1	+ 67 17 11.0	+ 1.2	Y.	
38	. .	. .	. .	+ 1 35.6	S. 1 46 41.7	1.8	+ 37 6 55.3	+ 6.9	Y.	
39	. .	. .	. .	— 1 1.0	N. 35 45 51.3	41.7	+ 74 40 11.8	+ 2.9	Y.	
40	. .	. .	. .	+ 2 30.8	N. 56 37 21.5	1 27.7	+ 84 27 32.0	— 2.3	Y.	
41	. .	. .	. .	— 2 10.9	S. 69 12 57.2	2 31.5	— 30 21 49.9	+ 13.6	Y.	
42	. .	. .	. .	+ 2 24.4	N. 33 22 34.1	38.2	+ 72 16 51.1	+ 5.8	Y.	
43	29.992	60.2	51.8	— 15.3	54 50 13.7	1 22.2	+ 86 14 45.3	— 4.6	Y.	
44	. .	. .	. .	. .		. .		. .	Y.	
45	. .	. .	. .	— 2 21.3	26 7 17.9	27.8	+ 65 1 24.5	— 13.6	Y.	
46	29.980	66.3	62.3	— 3.1	42 54 59.0	52.8	+ 81 49 30.6	— 15.9	Y.	
47	. .	. .	. .	+ 2 23.7	28 32 33.6	30.9	+ 67 26 43.3	— 12.8	Y.	
48	29.978	66.2	61.3	— 1 59.5	73 56 56.0	3 15.0	+ 67 6 10.2	+ 15.6	Y.	
49	. .	. .	. .	— 1 14.2	23 21 12.4	24.6	+ 62 15 15.8	— 10.8	Y.	+0″.36 applied to mean of B, C, D, and E.
50	. .	. .	. .	+ 51.8	N. 75 39 6.7	3 38.8	+ 65 23 35.7	+ 14.5	Y.	
51	. .	. .	. .	+ 2 30.3	S. 5 7 35.9	5.1	+ 33 45 57.8	— 2.2	Y.	
52	29.982	65.5	59.5	— 1 37.2	69 8 31.2	2 28.7	— 30 17 21.1	+ 16.0	Y.	
53	. .	. .	. .	— 24.7	66 4 43.9	2 8.1	— 27 13 13.2	+ 15.4	Y.	
54	. .	. .	. .	+ 1 42.9	S. 1 51 45.3	1.9	+ 37 1 51.6	— 1.2	Y.	
55	. .	. .	. .	— 1 49.3	N. 45 11 43.4	57.7	+ 84 6 19.9	— 9.7	Y.	
56	29.988	65.0	57.7	— 1 31.8	N. 45 11 26.0	57.7	+ 84 6 2.5	— 9.7	Y.	
57	. .	. .	. .	— 1 35.6	S. 62 3 27.1	1 47.8	— 23 18 36.1	+ 14.7	Y.	
58	. .	. .	. .	— 1 30.2	25 58 36.9	27.4	+ 12 54 34.5	+ 6.6	Y.	
59	. .	. .	. .	+ 47.3	S. 1 55 49.2	1.9	+ 36 57 47.7	+ 1.5	Y.	
60	. .	. .	. .	— 1 38.6	N. 54 46 36.0	1 21.5	+ 86 18 23.7	+ 6.2	Y.	
61	. .	. .	. .	+ 46.5	77 59 11.2	4 24.6	+ 63 2 45.4	+ 5.7	Y.	
62	29.980	63.8	53.6	— 24.4	69 15 19.0	2 31.3	+ 71 48 30.9	+ 5.1	Y.	
63	. .	. .	. .	. .		. .		. .	Y.	
64	29.944	64.2	58.5	+ 2 18.9	31 7 35.2	34.5	+ 70 1 48.5	— 14.2	Y.	
65	. .	. .	. .	+ 2 27.7	N. 31 7 26.4	34.5	+ 70 1 39.7	— 14.0	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1874.															
May 21	1	3 Draconis	. .	3	IV–VI	351 25 5.2	0.4	12.7	5.9	8.8	6.9	6.65	26.257	−0.673	25.577
	2	B. A. C. 8273, S. P. .	. .	3	IV–VI	306 5 1.9	54.9	4.1	58.7	2.1	2.1	0.63	34.360	. .	33.694
	3	B. A. C. 4036. . . .	. .	3	IV–VI	356 40 4.8	0.9	10.2	6.6	7.5	oblit.	6.17	33.216	. .	32.537
	4	Dorpat 1604 (1st *) .	7.5	2	I, IX	70 0 6.4	4.1	12.1	9.2	11.6	11.0	9.07	27.717	. .	27.054
	5	Dorpat 1604 (2d *) .	8.8	2	IV, VI	" " "	"	"	"	"	"	"	27.625	. .	26.953
	6	Weisse XII, 199. .	9.0	3	III–VII	52 25 3.0	59.2	7.8	2.2	4.6	6.0	3.80	28.745	. .	28.071
	7	Weisse (2) XII, 556 .	6.0	3	V–IX	33 55 4.1	1.2	8.8	5.5	7.2	7.7	5.75	31.483	. .	30.800
	8	32 Camelopardi (1st *) .	. .	3	I–5	334 50 2.4	55.3	6.0	0.0	4.3	3.2	1.87	34.061	. .	33.386
	9	32 Camelopardi (2d *) .	. .	2	V, 5	" " "	"	"	"	"	"	"	33.488	. .	32.814
	10	Lalande 24271 . .	8.0	3	V–IX	20 50 0.9	57.9	3.1	0.8	3.8	2.1	1.43	26.729	. .	26.040
	11	Weisse XIII, 225 .	8.5	3	III–VII	62 20 4.0	59.4	5.1	4.8	4.7	4.9	3.82	31.904	. .	31.232
	12	Lacaille 5573. . .	6.5	3	III–VII	86 20 5.9	3.9	11.3	9.5	8.4	8.9	7.98	31.961	. .	31.293
	13	i Centauri	4.5	3	III–VII	91 15 1.2	58.8	4.7	2.8	3 1	2.0	2.10	29.901	. .	29.234
	14	ε Cassiopeæ, S. P. .	. .	3	IV–VI	302 0 3.8	58.2	6.8	3.7	3.2	2.8	3.08	29.181	. .	28.514
	15	50 Cassiopeæ, S. P. .	. .	3	IV–VI	310 45 6.1	2.2	11.8	6.4	8.0	6.7	6.87	31.529	. .	30.865
	16	B. A. C. 4714. . .	5.8	3	III–VII	26 0 8.2	5.4	12.1	9.2	9.7	8.8	8.90	30.429	. .	29.750
	17	ι Cassiopeæ, S. P. .	. .	3	IV–VI	305 45 5.7	0.2	9.8	5.0	6.2	5.4	5.38	26.993	. .	26.327
	18	5 Ursæ Minoris . .	. .	3	IV½–V½	342 40 3.8	58.8	9.8	3.0	7.0	4.2	4.43	32.756	. .	32.080
	19	B. A. C. 814, S. P. .	. .	3	V, V½, VI	306 15 3.3	57.4	7.1	2.8	3.5	3.2	2.88	32.427	. .	31.759
	20	Anon. $14^h\ 44^m\ 53^s$.	8.5	3	III–VII	21 45 0.0	57.9	4.8	2.4	4.0	3.4	2.08	27.494	. .	26.814
	21	β Ursæ Minoris . .	. .	3	IV½–V½	344 15 4.4	1.5	10.9	7.7	8.2	6.2	6.48	32.548	. .	31.872
	22	B. A. C. 960	. .	3	1–5	323 25 4.3	59.2	10.5	4.5	6.6	5.1	5.03	35.300	. .	34.628
	23	O. Arg. S. 14435. . .	. .	3	III–VII	89 15 7.2	6.8	12.1	11.0	9.9	9.9	9.48	34.690	. .	34.023
	24	γ^2 Ursæ Majoris . .	. .	3	IV–VI	346 35 1.2	56.8	7.7	2.3	3.5	1.6	2.18	26.066	. .	25.384
	25	Nadir	. .	.	. .	200 0 3.6	0.7	7.7	7.0	3.8	6.5	4.88	30.677	. .	. .
22	26	γ Cephei, S. P. . . .	. .	3	IV½–V½	315 50 4.6	55.7	6.2	0.2	5.3	5.2	2.87	28.695	−0.676	28.022
	27	B. A. C. 8273, S. P. .	. .	3	V, V½, VI	306 5 2.8	54.0	4.0	59.1	3.0	3.0	0.98	34.356	. .	33.684
	28	B. A. C. 4050 . .	. .	3	IV½–V½	337 20 6.1	59.0	10.4	3.0	7.2	7.1	5.47	29.069	. .	28.388
	29	Anon. $12^h\ 8^m\ 37^s$.	7.0	3	III–VII	87 25 6.1	0.4	7.8	5.4	7.6	8.0	5.88	33.189	. .	32.518
	30	Anon. $12^h\ 16^m\ 1^s$.	8.5	3	III–VII	91 45 6.1	2.0	8.6	5.1	7.4	7.1	6.05	35.158	. .	34.488
	31	Anon. $12^h\ 26^m\ 52^s$.	8.5	3	III–VII	90 35 5.8	1.2	7.3	4.4	6.4	5.7	5.13	27.572	. .	26.902
	32	Lalande 23711 . .	7.5	3	III–VII	24 30 7.8	2.2	10.2	7.4	9.1	8.3	7.50	29.913	. .	29.230
	33	Lalande 23919 . .	8.2	3	III–VII	22 55 1.4	56.8	4.4	0.3	4.0	3.9	1.80	34.483	. .	33.800
	34	Lacaille 5342. . .	. .	3	III–VII	97 5 6.8	5.0	10.9	8.2	9.2	8.0	8.02	32.907	. .	32.239
	35	Weisse XIII, 235 .	7.5	3	III–VII	62 50 7.0	4.0	10.0	9.0	9.8	9.7	8.25	25.096	. .	24.421
	36	Lacaille 5573. . .	7.0	3	III–VII	86 20 4.7	0.4	8.2	6.1	6.2	7.1	5.45	31.904	. .	31.233
	37	B. A. C. 4560 . .	8.0	3	III–VII	71 0 6.3	1.1	9.8	7.0	8.2	9.2	6.93	28.510	. .	27.836
	38	Weisse (2) XIII, 976	8.0	3	III–VII	20 25 3.0	58.6	6.6	2.9	5.7	3.5	3.38	36.002	. .	35.318
	39	Anon. $13^h\ 49^m\ 25^s$.	8.0	3	IV–VI	96 40 3.2	59.7	7.8	5.2	5.8	4.8	4.42	37.204	. .	36.530
	40	α Draconis	. .	3	IV–VI	353 55 5.6	0.4	11.7	6.0	8.0	6.1	6.30	30.221	. .	29.539
	41	O. Arg. N. 14432 .	8.5	3	IV–VI	6 55 7.7	4.8	13.1	10.3	9.2	9.1	9.03	28.302	. .	27.622
	42	ι Cassiopeæ, S. P. .	. .	3	IV–VI	305 45 6.3	59.4	10.1	5.8	6.4	6.4	5.73	26.948	. .	26.279
	43	5 Ursæ Minoris . .	. .	3	IV½–V½	342 40 2.2	56.8	7.2	59.8	4.5	2.3	2.13	32.666	. .	31.987
	44	Nadir	. .	.	. .	199 59 57.3	51.8	59.7	58.5	57.2	60.0	57.42	30.444	. .	. .
26	45	B. A. C. 8273, S. P. .	. .	3	IV–VI	306 5 7.7	58.5	6.9	1.1	6.2	7.9	4.72	34.706	−0.798	33.915
	46	Anon. $12^h\ 13^m\ 38^s$.	7.5	3	III–VII	86 40 4.2	58.0	6.1	3.3	5.4	7.1	4.02	28.614	. .	27.821
	47	O. Arg. S. 12254. .	8.5	2	III, VII	81 40 1.9	56.2	3.2	59.5	1.9	3.0	0.95	32.792	. .	32.000
	48	Lalande 23711 . .	7.5	3	III–VII	24 30 4.7	57.9	6.2	3.1	4.4	6.0	3.72	29.961	. .	29.156
	49	O. Arg. S. 12444. .	9.0	3	III–VII	84 0 6.2	1.4	9.4	6.8	7.5	8.7	6.67	26.209	. .	25.416
	50	Anon. $12^h\ 57^m\ 25^s$.	8.2	3	III–VII	75 50 4.8	58.1	7.6	4.1	6.2	6.4	4.53	32.871	−0.798	32.076
	51	Moon N.	. .	3	IV–VI	65 10 1.7	55.2	4.1	0.8	2.1	5.1	1.50	25.321	−0.492	24.829
	52	Anon. $13^h\ 21^m\ 30^s$.	8.5	3	III–VII	91 40 7.1	2.2	9.2	6.4	7.7	8.5	6.85	29.669	−0.798	28.877
	53	Lacaille 5649 (2d *) .	. .	3	III–VII	92 10 3.9	0.2	7.2	4.4	4.8	6.0	4.42	27.863	. .	27.071
	54	Weisse (2) XIII, 910	8.5	3	III–VII	24 30 2.9	58.5	5.2	2.6	3.0	5.1	2.88	28.192	. .	27.387
	55	Anon. $13^h\ 53^m\ 30^s$.	8.8	3	III–VII	35 25 6.4	2.8	10.2	7.1	9.1	10.1	7.62	32.045	. .	31.243
	56	α Draconis	. .	3	IV–VI	353 55 7.2	3.7	13.0	8.3	10.1	10.8	8.85	30.426	. .	29.622
	57	ι Cassiopeæ, S. P. .	. .	3	IV–VI	305 45 4.2	58.1	7.7	3.6	3.9	5.2	3.75	27.165	. .	26.374
	58	5 Ursæ Minoris . .	. .	3	IV–VI	342 40 7.2	2.1	13.2	5.1	10.2	8.5	7.72	33.041	. .	32.231
	59	Weisse (2) XIV, 788	7.2	3	III–VII	21 35 2.9	59.8	7.0	3.7	5.2	6.6	4.20	28.975	. .	28.170
	60	Weisse (2) XIV, 932	. .	3	III–VII	22 20 4.8	2.2	8.5	7 0	7.8	9.0	6.55	32.608	. .	31.803
	61	Weisse (2) XIV, 936	. .	2	VII, IX	" " "	"	"	"	"	"	"	34.916	. .	34.094
	62	β Ursæ Minoris . .	. .	3	V, V½, VI	344 15 6.0	2.1	10.9	7.0	8.4	8.9	7.20	32.751	. .	31.946
	63	B. A. C. 960, S. P. .	. .	3	1–5	323 25 7.7	4.4	14.2	9.5	11.2	10.2	9.53	35.679	. .	34.882
	64	γ^2 Ursæ Majoris . .	. .	3	IV–VI	346 35 7.1	2.5	14.0	7.9	9.2	9.4	8.35	26.500	. .	25.693
	65	B. A. C. 1061, S. P. .	. .	3	1–5	325 10 3.8	0.5	9.5	5.1	6.8	7.2	5.48	31.502	−0.798	30.706

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1874.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	+ 2 18.6	N. 28 32 34.7	31.1	+ 67 26 44.6	— 13.1	Y.	
2	. .	. .	. .	— 1 55.8	73 56 55.2	3 16.1	+ 67 6 9.9	+ 15.7	Y.	
3	29.960	64.0	58.0	— 1 19.5	N. 23 21 13.4	24.7	+ 62 15 16.9	— 11.1	Y.	—0″.13 applied to mean of B, C, D, and E.
4	. .	. .	. .	+ 1 32.3	S. 50 1 41.4	1 8.2	— 11 9 10.8	+ 10.9	Y.	
5	. .	. .	. .	+ 1 35.5	50 1 44.6	1 8.2	— 11 9 14.0	+ 10.9	Y.	
6	. .	. .	. .	+ 1 0.5	32 26 4.3	36.4	+ 6 26 58.1	+ 5.9	Y.	
7	29.976	63.5	57.5	— 25.1	S. 13 54 40.7	14.2	+ 24 58 43.9	+ 1.0	Y.	
8	. .	. .	. .	— 1 46.1	N. 45 11 44.2	57.7	+ 84 6 20.7	— 10.1	Y.	
9	29.976	63.0	56.8	— 1 28.2	N. 45 11 26.3	57.7	+ 84 6 2.8	— 10.1	Y.	
10	. .	. .	. .	+ 2 4.1	S. 0 52 5.5	0.9	+ 38 1 32.4	— 1.0	Y.	
11	. .	. .	. .	— 38.6	42 19 25.2	52.3	— 3 26 38.7	+ 10.5	Y.	
12	29.990	62.5	55.8	— 40.5	66 19 27.4	2 10.5	— 27 27 59.1	+ 15.6	Y.	
13	. .	. .	. .	+ 24.0	S. 71 15 26.1	2 48.0	— 32 24 35.3	+ 16.2	Y.	
14	. .	. .	. .	+ 46.6	N. 77 59 10.4	4 24.0	+ 63 2 46.8	+ 6.2	Y.	
15	29.990	61.8	55.0	— 27.1	N. 69 15 20.2	2 31.0	+ 71 58 30.0	+ 5.6	Y.	
16	. .	. .	. .	+ 7.8	S. 6 0 16.7	6.1	+ 32 53 16.0	+ 4.4	Y.	
17	. .	. .	54.4	+ 1 55.1	N. 74 12 59.5	3 21.2	+ 66 50 0.5	+ 3.2	Y.	
18	. .	. .	. .	— 1 5.2	37 21 0.8	44.0	+ 76 15 23.6	— 0.4	Y.	
19	29.990	61.0	54.0	— 55.1	N. 73 45 52.2	3 15.7	+ 67 17 13.3	+ 1.8	Y.	
20	. .	. .	. .	+ 1 39.8	S. 1 46 41.9	1.8	+ 37 6 55.1	+ 6.1	Y.	
21	. .	. .	. .	— 58.7	N. 35 45 52.2	41.6	+ 74 40 12.6	+ 1.9	Y.	
22	. .	. .	. .	— 2 25.0	N. 56 37 20.0	1 27.6	+ 84 27 33.6	— 1.4	Y.	
23	. .	. .	. .	— 2 6.1	S. 69 13 3.4	2 31.5	— 30 21 56.1	+ 13.8	Y.	
24	29.990	60.0	51.8	+ 2 24.7	N. 33 22 33.2	38.2	+ 72 16 50.2	+ 4.8	Y.	
25	. .	. .	. .	. .		. .		. .	Y.	
26	30.060	65.0	61.0	+ 1 2.0	64 8 55.1	1 57.3	+ 76 55 28.8	+ 16.4	Y.	
27	. .	. .	. .	— 1 55.5	73 56 54.5	3 15.8	+ 67 6 10.9	+ 15.6	Y.	
28	30.064	65.0	60.4	+ 50.5	N. 42 39 4.0	52.6	+ 81 33 35.4	— 14.0	Y.	
29	. .	. .	. .	— 1 18.9	S. 67 23 46.9	2 16.5	— 28 32 24.6	+ 15.8	Y.	
30	30.078	64.5	60.0	— 2 20.7	71 42 45.4	2 51.4	— 32 51 58.0	+ 16.9	Y.	
31	. .	. .	. .	+ 1 37.1	70 36 42.2	2 41.2	— 31 45 44.6	+ 16.5	Y.	
32	. .	. .	. .	+ 24.1	4 30 31.6	4.5	+ 34 23 2.7	— 1.4	Y.	
33	. .	. .	. .	— 1 59.1	2 53 2.7	2.9	+ 36 0 33.2	— 1.5	Y.	
34	30.080	63.8	58.6	— 1 10.2	77 3 57.9	4 4.6	— 38 14 23.7	+ 17.8	Y.	
35	. .	. .	. .	+ 2 54.9	42 53 3.1	53.5	— 4 0 17.8	+ 10.5	Y.	
36	30.078	63.3	55.8	— 38.6	66 19 26.8	2 10.8	— 27 27 58.8	+ 15.6	Y.	
37	. .	. .	. .	+ 1 7.8	51 1 14.7	1 11.3	— 12 8 47.2	+ 12.7	Y.	
38	. .	. .	. .	— 2 46.7	0 32 16.7	0.5	+ 38 21 21.6	— 1.1	Y.	
39	. .	. .	55.0	— 3 24.6	76 36 39.8	3 58.1	— 37 46 59.1	+ 16.8	Y.	
40	30.090	62.5	54.7	+ 14.4	S. 26 4 39.3	28.3	+ 64 58 46.4	— 1.7	Y.	
41	. .	. .	. .	+ 1 14.5	N. 13 3 36.4	13.4	+ 51 57 28.6	+ 1.2	Y.	
42	30.086	62.0	54.2	+ 1 56.6	74 12 57.6	3 22.0	+ 66 50 1.6	+ 3.4	Y.	
43	. .	. .	. .	— 1 2.3	37 21 0.2	44.2	+ 76 15 23.2	— 0.7	Y.	
44	. .	. .	. .	. .		. .		. .	Y.	
45	29.906	69.2	65.4	— 2 2.7	N. 76 56 58.0	3 12.9	+ 67 6 10.3	+ 15.6	Y.	
46	29.914	68.7	63.8	+ 1 8.3	S. 66 41 12.3	2 10.2	— 27 49 43.7	+ 15.8	Y.	
47	. .	. .	. .	— 1 2.7	61 38 58.3	1 44.3	— 22 47 3.8	+ 14.7	Y.	
48	. .	. .	. .	+ 26.4	4 30 30.2	4.5	+ 34 23 4.1	— 1.9	Y.	
49	. .	. .	. .	+ 2 23.7	64 2 30.3	1 55.9	— 25 10 47.4	+ 15.4	Y.	Faint and uncertain.
50	29.934	67.5	62.0	— 1 5.1	55 48 59.5	+ 1 23.3	— 16 56 44.0	+ 13.5	Y.	
51	29.940	67.2	61.3	+ 2 42.1	45 12 43.6	—22 32.6	— 5 56 32.2	. .	Y.	North wire.
52	. .	. .	. .	+ 35.2	71 40 42.0	+ 2 49.9	— 32 49 53.1	+ 17.0	Y.	
53	29.944	66.5	60.5	+ 1 31.8	72 11 36.2	2 55.2	— 33 20 52.6	+ 17.0	Y.	Observed southward very close.
54	. .	. .	. .	+ 1 21.9	4 31 24.8	4.5	+ 34 22 9.5	+ 1.9	Y.	
55	. .	. .	. .	— 38.9	S. 15 24 28.7	15.7	+ 23 28 54.4	+ 4.9	Y.	
56	29.960	66.0	59.7	+ 11.8	N. 26 4 39.3	27.9	+ 64 58 46.0	— 2.6	Y.	
57	29.970	65.5	59.3	+ 1 53.7	74 13 2.6	3 19.1	+ 66 49 59.5	+ 4.0	Y.	
58	. .	. .	. .	— 1 9.9	N. 37 21 2.2	43.6	+ 76 15 24.6	— 1.7	Y.	
59	. .	. .	. .	+ 57.3	S. 1 36 1.5	1.6	+ 37 17 35.7	+ 4.5	Y.	
60	. .	. .	. .	— 56.5	2 19 10.0	2.3	+ 36 34 26.5	+ 5.0	Y.	
61	. .	. .	. .	— 2 8.3	S. 2 17 58.3	2.3	+ 36 35 38.2	+ 5.0	Y.	
62	. .	. .	. .	— 1 1.0	N. 35 45 53.8	41.2	+ 74 40 13.8	+ 0.5	Y.	
63	29.970	64.5	58.2	— 2 33.0	56 37 23.5	1 26.7	+ 84 27 31.0	— 0.1	Y.	
64	. .	. .	. .	+ 2 15.0	33 22 36.7	37.7	+ 72 16 53.2	+ 3.4	Y	
65	29.974	64.0	57.6	— 22.1	N. 54 50 16.6	1 21.2	+ 86 14 43.4	— 2.2	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1874.															
May 26	1	Anon. $15^h\ 39^m\ 49^s$.	8.2	3	III–VII	21 0 6.2	3.4	10.2	8.5	9.2	7.7	7.53	35.188	−0.798	34.383
	2	Nadir	. .	.	. .	200 0 1.2	58.8	6.0	4.6	3.1	6.1	3.30	30.750	. .	. .
30	3	Anon. $12^h\ 42^m\ 36^s$.	8.5	3	III–VII	40 29 60.7	50.8	59.1	55.2	60.2	62.9	58.15	34.954	−0.798	34.153
	4	Anon. $12^h\ 53^m\ 37^s$.	8.0	2	V, VI	349 30 8.9	0.4	12.1	4.5	9.5	9.7	7.52	29.542	. .	28.738
	5	Weisse XIII, 235 .	7.8	2	VII, IX	62 50 5.9	59.2	6.2	1.8	6.4	8.9	4.73	25.076	. .	24.279
	6	Weisse XIII, 569 .	8.5	3	III–VII	66 55 2.9	53.8	3.2	57.9	2.7	5.9	1.07	34.354	. .	33.557
	7	Lacaille 5699 . .	7.5	3	III–VII	89 20 5.2	55.1	4.2	0.6	3.5	6.2	2.47	34.997	. .	34.205
	8	Anon. $13^h\ 52^m\ 54^s$.	8.5	3	III–VII	95 40 9.9	3.0	10.2	6.8	10.7	10.9	8.58	35.975	. .	35.184
	9	B. A. C. 4714 . .	6.0	3	III–VII	26 0 8.9	1.0	10.0	4.3	9.7	9.8	7.28	30.556	. .	29.752
	10	O. Arg. S. 13584 .	7.2	3	III–VII	78 5 7.3	59.8	8.8	4.6	7.6	8.4	6.08	29.296	. .	28.501
	11	Weisse (2) XIV, 788	7.5	3	III–VII	21 35 8.8	0.6	7.8	3.4	9.3	11.1	6.83	29.133	. .	28.328
	12	β Ursæ Minoris . .	. .	3	IV½–V½	344 15 9.1	0.2	11.2	4.2	10.3	10.1	7.52	32.818	. .	32.017
	13	48 Cephei, S. P. . . .	. .	2	V, VI	316 9 62.4	50.9	63.8	55.7	60.9	62.6	59.38	27.692	. .	26.904
	14	Anon. $15^h\ 14^m\ 6^s$.	7.5	3	III–VII	96 0 2.4	55.5	3.7	59.5	1.8	3.9	1.13	28.964	. .	28.173
	15	γ^2 Ursæ Majoris . .	. .	3	IV–VI	346 34 59.7	51.1	63.8	54.9	59.8	62.1	58.57	26.268	. .	25.461
	16	Anon. $15^h\ 31^m\ 46^s$.	8.8	3	III–VII	94 50 3.8	55.3	4.2	0.4	2.6	4.1	1.73	27.110	. .	26.319
	17	Lacaille 6541. . .	7.7	3	III–VII	91 15 7.2	0.1	8.3	3.9	6.4	8.1	5.67	28.488	. .	27.696
	18	ζ Ursæ Minoris . .	. .	3	IV½–V½	340 45 9.8	2.2	12.2	9.4	10.0	11.9	9.25	33.777	. .	32.976
	19	B. A. C. 5352 . .	7.0	3	I–5	335 35 6.0	57.3	8.1	0.2	5.2	6.4	3.87	30.602	. .	29.803
	20	Nadir	. .	.	. .	199 59 61.2	52.9	61.8	58.4	59.6	63.9	59.63	30.635	. .	. .
June 1	21	Anon. $12^h\ 45^m\ 52^s$.	8.5	3	III–VII	97 30 7.0	2.2	9.5	6.4	5.6	7.0	6.28	35.790	−0.628	35.170
	22	Anon. $13^h\ 14^m\ 23^s$.	8.8	3	III–VII	20 25 4.9	59.8	8.0	4.4	6.7	6.0	4.97	30.684	. .	30.048
	23	Lacaille 5649 . .	. .	3	III–VII	92 10 5.1	0.7	7.8	6.1	3.7	5.9	4.88	27.710	. .	27.088
	24	Weisse (2) XIII, 894	9.0	3	III–VII	36 0 9.7	4.0	10.9	9.8	7.7	9.1	8.53	33.497	. .	32.865
	25	Anon. $13^h\ 51^m\ 29^s$.	9.0	3	III–VII	95 35 2.1	58.0	5.6	1.2	1.1	3.0	1.83	30.061	. .	29.440
	26	Anon. $13^h\ 52^m\ 55^s$.	8.5	3	V–IX	" " "	"	"	"	"	"	"	26.073	. .	25.759
	27	β Ursæ Minoris . .	. .	3	IV½–VI½	344 15 5.8	59.4	9.4	5.8	5.5	5.8	5.28	32.542	. .	31.911
	28	O. Arg. S. 14257. .	8.2	3	III–VII	87 55 7.5	3.3	11.3	10.8	6.8	9.1	8.13	35.807	. .	35.184
	29	48 Cephei, S. P. . .	. .	3	V, V½, VI	316 10 1.8	53.8	5.6	58.9	59.8	1.8	0.28	27.525	. .	26.905
	30	Weisse XV, 210 .	9.5	2	V, IX	72 25 9.5	4.9	12.6	11.5	8.8	10.4	9.62	34.347	. .	33.724
	31	γ^2 Ursæ Majoris . .	. .	3	IV–VI	346 35 3.8	57.8	9.7	3.2	3.7	5.9	4.02	26.278	. .	25.641
	32	Anon. $15^h\ 31^m\ 49^s$.	. .	3	III–VII	94 50 8.0	4.1	12.1	10.3	7.4	7.2	8.18	27.370	. .	26.749
	33	Lacaille 6541 . .	7.5	3	III–VII	91 15 3.1	0.6	7.1	5.3	2.9	3.7	3.78	28.313	. .	27.691
	34	ζ Ursæ Minoris . .	. .	3	IV½–V½	340 45 5.1	1.8	10.6	9.3	4.4	4.9	6.02	33.475	. .	32.842
	35	B. A. C. 5352 . .	. .	3	I–5	335 35 5.8	0.9	12.2	7.1	4.7	5.6	6.05	30.514	. .	29.885
	36	Groombridge 2320 .	. .	3	IV–VI	350 45 5.2	59.9	11.2	8.2	5.4	5.2	5.85	29.418	. .	28.783
	37	Anon. $16^h\ 13^m\ 26^s$.	6.0	3	V–IX	82 40 6.1	3.4	10.8	9.8	5.2	6.1	6.90	23.546	. .	22.926
	38	η Draconis	. .	3	IV–VI	357 5 9.5	7.8	17.4	14.9	10.7	oblit.	12.36	28.786	. .	28.153
	39	Nadir	. .	.	. .	200 0 0.5	57.5	4.8	4.4	59.7	3.1	1.67	30.529	. .	. .
4	40	Lalande 24271 . .	7.5	3	III–VII	20 50 6.8	2.1	8.8	5.3	9.6	9.0	6.93	26.961	−0.622	26.331
	41	Lacaille 5649 . .	7.5	3	III–VII	92 10 3.6	0.2	7.8	4.8	5.7	4.3	4.40	27.590	. .	26.974
	42	Weisse (2) XIII, 814	8.5	3	III–VII	36 29 59.2	54.8	61.7	58.2	62.6	61.0	59.58	34.066	. .	33.440
	43	Weisse XIII, 794 .	8.3	3	III–VII	45 35 3.9	58.3	6.0	2.9	6.1	4.9	3.68	30.690	. .	30.066
	44	Weisse XIII, 942 .	9.0	3	V–IX	56 45 3.9	56.1	3.1	0.9	4.2	4.1	2.05	33.937	. .	33.313
	45	O. Arg. S. 13589. .	8.5	3	III–VII	78 0 6.7	1.7	8.6	6.9	9.1	8.5	6.92	25.385	. .	24.766
	46	5 Ursæ Minoris . .	. .	3	IV½–V½	342 40 4.1	57.0	7.7	59.9	6.1	4.0	3.13	32.820	. .	32.195
	47	B. A. C. 814, S. P. .	. .	3	IV–VI	306 14 61.2	52.8	62.1	57.0	60.7	61.0	59.13	32.562	. .	31.947
	48	O. Arg. N. 14996 .	8.0	3	IV–VI	359 0 5.8	59.4	9.1	5.2	6.9	4.8	5.20	29.294	. .	28.667
	49	48 Cephei, S. P. . .	. .	3	IV½–V½	316 10 5.1	54.0	6.8	0.4	4.9	5.0	2.70	27.680	. .	27.061
	50	Weisse XV. 210 .	9.0	2	VII, IX	72 25 5.2	1.7	8.0	5.5	7.2	7.0	5.77	34.400	. .	33.786
	51	Lalande 28347 . .	7.5	3	III–VII	21 50 4.3	58.2	5.8	2.7	6.3	5.9	3.87	29.119	. .	28.490
	52	Radcliffe 3448 . .	. .	3	III–VII	16 0 8.2	2.9	10.8	6.2	9.8	8.2	7.68	26.751	. .	26.120
	53	ζ Ursæ Minoris . .	. .	3	IV½–V½	340 45 4.5	58.6	9.0	5.2	8.1	5.9	5.22	33.492	. .	32.867
	54	Lalande 29341 . .	6.8	3	III–VII	24 25 6.5	0.8	9.8	6.7	8.9	7.6	6.72	36.117	. .	35.488
	55	Groombridge 2320 .	. .	2	V, VI	350 45 5.9	59.2	11.0	6.7	9.8	7.0	6.60	29.468	. .	28.840
	56	Anon. $16^h\ 13^m\ 26^s$.	6.5	3	III–VII	82 45 7.2	0.3	8.9	7.2	7.2	7.0	6.30	33.084	. .	32.406
	57	η Draconis. . . .	. .	3	IV–VI	357 5 8.0	2.9	14.0	10.9	11.2	oblit.	9.94	28.729	. .	28.102
	58	A Draconis	. .	3	IV–VI	349 50 2.0	54.8	6.5	0.4	3.4	2.1	1.53	27.103	. .	26.478
	59	B. A. C. 1448, S. P. .	. .	3	IV½–V½	319 55 6.7	58.8	9.8	2.8	7.2	6.0	5.22	32.629	. .	32.011
	60	B. A. C. 5705 . .	. .	3	IV –V½	341 10 7.6	1.7	12.1	8.8	9.7	7.4	7.88	29.473	. .	28.853
	61	ϵ Ursæ Minoris . .	. .	3	I–5	336 40 2.4	54.8	6.8	59.2	3.5	2.1	1.47	30.273	. .	29.650
	62	Nadir	. .	.	. .	200 0 2.3	55.7	3.9	1.0	1.6	4.3	1.47	30.518	. .	. .
9	63	B. A. C. 4613 . .	. .	3	III–VII	79 4 62.5	51.9	61.2	56.1	60.5	66.7	59.82	26.944	−0.541	26.407
	64	Anon. $13^h\ 56^m\ 35^s$.	8.0	3	III–VII	96 0 7.0	57.8	6.4	1.8	5.6	11.1	4.95	30.169	−0.541	29.635

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1874.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	— 2 17.4	S. 0 57 50.2	1.0	+ 37 55 47.6	+ 8.1	Y.	
2	. .	. .	. .	. .		. .		. .	Y.	
3	30.006	76.5	75.5	— 2 10.2	S. 20 27 48.0	20.7	+ 18 25 30.1	+ 2.7	Y.	
4	. .	. .	. .	+ 39.5	N. 30 29 13.0	32.6	+ 69 23 24.4	— 9.2	Y.	
5	. .	. .	. .	+ 2 59.3	S. 42 53 4.0	51.5	— 4 0 16.7	+ 10.3	Y.	
6	30.010	76.0	74.0	— 1 51.5	46 53 9.6	59.3	— 8 0 30.1	+ 11.7	Y.	
7	. .	. .	. .	— 2 11.8	69 17 50.7	2 25.9	— 30 26 37.8	+ 16.7	Y.	
8	. .	. .	. .	— 2 42.5	75 37 26.1	3 33.3	— 36 47 20.6	+ 17.7	Y.	
9	. .	. .	. .	+ 7.8	6 0 15.1	5.9	+ 32 53 17.8	+ 2.8	Y.	
10	30.010	75.2	71.3	+ 47.0	58 5 53.0	1 29.4	— 19 13 43.6	+ 14.3	Y.	
11	. .	. .	. .	+ 52.5	S. 1 35 59.3	1.5	+ 37 17 37.9	+ 3.7	Y.	
12	30.012	74.5	70.5	— 1 3.2	N. 35 45 55.7	40.3	+ 74 40 14.8	— 0.4	Y.	
13	. .	. .	70.7	+ 1 37.0	N. 63 48 23.6	1 53.1	+ 77 16 4.5	+ 0.8	Y.	
14	. .	. .	. .	+ 57.3	S. 76 0 58.4	3 40.3	— 37 10 59.9	+ 15.2	Y.	
15	30.006	74.0	70.3	+ 2 22.2	N. 33 22 29.2	36.9	+ 72 16 54.9	+ 2.3	Y.	
16	. .	. .	. .	+ 1 55.4	S. 74 51 57.1	3 23.4	— 36 1 41.7	+ 14.4	Y.	
17	. .	. .	. .	+ 1 12.2	S. 71 16 17.9	2 43.2	— 32 25 22.3	+ 13.7	Y.	
18	. .	. .	. .	— 1 33.2	N. 39 16 24.0	45.7	+ 78 10 48.5	+ 4.2	Y.	
19	30.004	74.0	70.3	+ 6.2	N. 44 24 49.9	54.7	+ 83 19 23.4	+ 4.6	Y.	
20	. .	. .	. .	. .		. .		. .	Y.	
21	29.860	74.0	69.4	— 2 42.0	S. 77 27 24.2	4 4.7	— 38 37 50.1	+ 18.8	Y.	
22	. .	. .	. .	+ 1.5	0 25 6.5	0.4	+ 38 28 31.9	— 1.8	Y.	
23	29.880	73.3	67.4	+ 1 31.2	72 11 36.1	2 52.3	— 33 20 49.6	+ 17.5	Y.	If double, very close.
24	. .	. .	. .	— 1 29.8	15 58 38.8	16.0	+ 22 54 44.0	+ 3.7	Y.	
25	. .	. .	. .	+ 17.5	75 35 19.4	3 34.7	— 36 45 15.3	+ 17.9	Y.	
26	29.896	72.5	67.0	+ 2 12.9	S. 75 37 14.8	3 35.2	— 36 47 11.2	+ 17.9	Y.	
27	29.912	71.3	65.2	— 59.9	N. 35 45 54.6	40.6	+ 74 40 14.0	— 1.0	Y.	
28	. .	. .	. .	— 2 42.5	S. 67 52 25.7	2 17.6	— 29 1 4.5	+ 15.1	Y.	
29	29.916	71.0	64.3	+ 1 37.0	N. 63 48 22.7	1 54.2	+ 77 16 4.3	+ 1.2	Y.	
30	. .	. .	. .	— 1 56.7	S. 52 23 12.9	1 13.2	— 13 30 47.3	+ 12.8	Y.	Faint and uncertain.
31	. .	. .	. .	+ 2 16.6	N. 33 22 39.4	37.2	+ 72 16 55.4	+ 1.7	Y.	
32	29.930	70.2	63.3	+ 1 41.9	S. 74 51 50.1	3 25.8	— 36 1 37.1	+ 14.6	Y.	
33	. .	. .	. .	+ 1 12.4	S. 71 16 16.2	2 45.2	— 32 25 22.6	+ 13.9	Y.	
34	. .	. .	. .	— 1 29.1	N. 39 16 23.0	46.2	+ 78 10 48.0	+ 3.6	Y.	
35	29.944	69.2	63.3	+ 3.6	44 24 50.4	55.4	+ 83 19 24.6	+ 4.0	Y.	
36	. .	. .	. .	+ 38.1	N. 29 14 16.0	31.7	+ 68 8 26.5	+ 5.7	Y.	
37	. .	. .	. .	+ 3 41.7	S. 62 43 48.6	1 49.3	— 23 51 59.1	+ 12.2	Y.	
38	29.944	68.5	62.7	+ 57.9	N. 22 53 49.8	23.9	+ 61 47 52.5	+ 7.4	Y.	—0″.34 applied to mean of B, C, D, and E.
39	. .	. .	. .	. .		. .		. .	Y.	
40	30.030	71.0	72.0	+ 1 55.0	S. 0 52 1.9	0.8	+ 38 1 36.1	— 3.1	Y.	
41	. .	. .	. .	+ 1 34.8	72 11 39.2	2 52.2	— 33 20 52.6	+ 17.6	Y.	
42	30.036	71.0	70.8	— 1 47.8	16 28 11.8	16.6	+ 22 25 10.4	+ 3.1	Y.	
43	. .	. .	. .	— 2.1	25 35 1.6	26.8	+ 13 18 10.4	+ 5.9	Y.	
44	. .	. .	. .	— 1 43.8	36 43 18.2	41.8	+ 2 9 38.8	+ 9.0	Y.	
45	30.040	71.0	69.7	+ 2 44.0	S. 58 2 51.0	1 29.6	— 19 10 41.8	+ 14.2	Y.	
46	. .	. .	. .	— 1 8.8	N. 37 21 5.6	42.8	+ 76 15 27.2	— 3.9	Y.	
47	30.042	71.0	69.5	— 1 1.0	73 46 1.9	3 10.0	+ 67 17 9.3	+ 4.1	Y.	
48	. .	. .	. .	+ 41.8	20 59 13.0	21.5	+ 59 53 13.3	— 0.1	Y.	
49	. .	. .	. .	+ 1 32.1	N. 63 48 25.2	1 53.5	+ 77 16 2.5	+ 2.0	Y.	
50	. .	. .	. .	— 1 58.7	S. 52 23 7.1	1 12.7	— 13 30 41.0	+ 12.6	Y.	
51	. .	. .	. .	+ 47.3	S. 1 50 51.2	1.8	+ 37 2 45.8	+ 5.2	Y.	
52	. .	. .	. .	+ 2 1.6	N. 3 57 50.7	3.9	+ 42 51 33.4	+ 5.3	Y.	
53	30.034	70.7	68.5	— 1 29.8	N. 39 16 24.6	45.9	+ 78 10 49.3	+ 2.6	Y.	
54	. .	. .	. .	— 2 52.0	S. 4 22 14.7	4.3	+ 34 31 19.8	+ 7.2	Y.	
55	. .	. .	. .	+ 36.3	N. 29 14 17.1	31.5	+ 68 8 27.4	+ 4.7	Y.	
56	. .	. .	. .	— 1 17.3	S. 62 43 49.0	1 48.6	— 23 51 58.8	+ 12.2	Y.	
57	. .	. .	. .	+ 1 59.5	N. 22 53 50.6	23.8	+ 61 47 53.2	+ 6.3	Y.	+0″.19 applied to mean of B C, D, and E.
58	. .	. .	. .	+ 1 50.4	30 8 8.1	32.7	+ 69 2 19.6	+ 6.3	Y.	
59	30.040	70.2	67.5	— 1 3.0	60 5 57.8	1 37.6	+ 80 58 45.8	— 5.7	Y.	
60	. .	. .	. .	+ 35.9	38 49 16.2	45.3	+ 77 43 40.3	+ 7.5	Y.	
61	. .	. .	67.3	+ 11.0	N. 43 19 47.6	53.1	+ 82 14 19.5	+ 8.1	Y.	
62	. .	. .	. .	. .		. .		. .	Y.	
63	29.880	85.2	85.5	+ 1 52.6	S. 59 6 52.4	1 30.2	— 20 14 43.8	+ 14.7	Y.	
64	. .	. .	. .	+ 11.4	S. 76 0 16.4	3 33.2	— 37 10 10.8	+ 18.6	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES. A.			B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
1874.						°	′	″	″	″	″	″	″	″	r.	r.	r.
June 9	1	Weisse (2) XIV, 21 . .		3	III–VII	21	30	2.2	52.0	1.0	56.2	4.1	6.3	0.30	25.499	−0.541	24.951
	2	O. Arg. S. 13589. .	8.5	2	III, VII	78	0	8.9	58.0	6.9	3.0	7.8	13.0	6.27	25.193	. .	24.657
	3	Lacaille 6109. . .	7.0	3	III–VII	90	45	8.0	56.2	3.9	59.9	3.1	10.0	3.52	30.070	. .	29.535
	4	O. Arg. S. 14257. .	8.0	3	III–VII	87	55	7.1	55.8	3.9	0.1	3.7	9.3	3.32	35.384	. .	34.848
	5	Weisse XV, 210. .		3	III–VII	72	25	8.0	58.8	5.2	2.2	5.4	10.3	4.98	34.154	. .	33.615
	6	Lalande 28347 . .		3	III–VII	21	50	7.3	57.2	5.8	0.7	6.8	11.0	4.80	29.174	. .	28.626
	7	Radcliffe 3448 . .		3	III–VII	16	0	7.4	56.6	6.2	59.8	6.8	10.3	4.52	26.692	. .	26.142
	8	ζ Ursæ Minoris . .		3	IV½–V½	340	45	3.4	51.8	3.2	56.2	2.9	6.9	0.73	33.361	. .	32.817
	9	Groombridge, 2320 .		3	IV–VI	350	45	7.8	57.4	9.2	2.5	7.9	10.0	5.80	29.481	. .	28.933
	10	Weisse (2), XVI, 616		3	V–IX	20	39	60.8	48.8	58.2	52.7	58.8	62.0	56.88	27.007	. .	26.448
	11	A Draconis		3	IV½–V½	349	50	8.6	57.4	9.6	1.8	7.9	11.1	6.07	27.315	. .	26.772
	12	B. A. C. 1448, S. P. .		2	I, 5	319	50	6.3	53.1	6.7	57.2	3.7	8.0	2.50	23.050	. .	22.511
	13	B. A. C. 5705 . .		3	IV½–V½	341	10	8.8	57.2	10.6	3.8	7.5	10.4	6.38	29.467	. .	28.923
	14	ε Ursæ Minoris . .		3	I–5	336	39	63.6	50.4	64.8	53.9	61.3	65.3	59.88	30.282	. .	29.740
	15	Nadir		.	. .	199	59	60.2	47.8	57.9	52.9	56.6	64.2	56.93	30.295	. .	. .
12	16	B. A. C. 4613 . .	7.0	3	III–VII	79	5	7.4	59.8	14.9	59.5	13.7	2.5	6.30	27.305	−0.667	26.642
	17	Weisse (2) XIII, 1167	8.5	3	V–IX	35	20	6.2	58.7	13.6	57.4	11.8	1.8	4.92	29.532	. .	28.855
	18	Weisse (2) XIV, 21 .		3	III–VII	21	30	8.2	1.2	15.9	1.0	15.8	4.9	7.83	25.861	. .	25.187
	19	Schwerd 835 . . .	7.7	3	IV½–V½	349	0	8.0	59.3	18.7	59.9	13.9	2.8	7.10	32.096	. .	31.427
	20	Lacaille 6109. . .	7.0	3	III–VII	90	45	5.2	57.9	12.9	57.8	9.8	58.7	3.72	30.280	. .	29.619
	21	Weisse XV, 210 . .	9.0	3	III–VII	72	25	7.1	0.7	14.8	1.1	11.7	1.9	6.22	34.478	. .	33.813
	22	Lalande 28391 . .	9.0	3	III–VII	31	45	7.5	1.2	15.1	0.0	12.9	3.1	6.63	29.673	. .	29.001
	23	Lalande 29146 . .	7.5	3	III–VII	20	45	3.8	58.0	13.2	58.0	10.8	59.3	3.85	35.911	. .	35.236
	24	Groombridge 2320 .		3	IV–VI	350	45	9.3	3.0	22.3	4.8	16.2	4.9	10.08	29.725	. .	29.051
	25	O. Arg. S. 15671. .	7.5	3	III–VII	83	45	1.9	56.3	10.8	56.6	7.1	57.1	1.63	32.652	. .	31.989
	26	A Draconis		3	IV–VI	349	50	9.3	3.1	21.1	4.9	16.2	4.6	9.87	27.527	. .	26.852
	27	B. A. C. 1448, S. P. .		3	IV½–V½	319	55	4.7	57.8	16.8	57.7	10.5	59.7	4.53	32.755	. .	32.092
	28	B. A. C. 1510, S. P. .		3	IV–VI	312	50	4.4	57.2	16.5	57.8	10.4	58.9	4.20	33.625	. .	32.968
	29	ε Ursæ Minoris . .		3	I–5	336	40	6.2	0.1	18.2	0.8	13.2	1.0	6.58	30.578	. .	29.910
	30	B. A. C. 1619, S. P. .	6.0	3	IV½–V½	316	45	8.1	0.0	17.9	0.0	14.6	2.1	7.12	27.173	. .	26.509
	31	B. A. C. 1706, S. P. .		3	IV½–V½	313	55	3.8	55.2	14.5	56.1	10.5	58.0	3.02	34.196	. .	33.532
	32	Nadir		.	. .	200	0	5.2	59.2	14.8	0.5	10.1	1.7	5.25	30.684	. .	. .
17	33	Anon. $14^h\ 17^m\ 57^s$.	7.0	3	III–VII	70	0	5.8	59.7	13.7	58.9	12.7	2.4	5.53	33.588	−0.573	33.017
	34	Lalande 26923 . .	6.7	3	III–VII	25	35	7.5	59.8	14.1	58.8	13.2	2.2	5.93	32.340	. .	31.761
	35	Weisse XV, 1110 .		2	III, VII	60	45	7.9	2.7	15.8	1.4	15.5	5.5	8.13	33.128	. .	32.556
	36	Anon. $15^h\ 13^m\ 15^s$.	8.8	3	III–VII	96	0	4.1	59.3	12.7	57.1	11.1	0.2	4.08	32.595	. .	32.029
	37	Rumker 5072 . .	7.8	3	III–VII	20	15	2.0	53.9	10.7	53.4	8.7	57.2	1.97	29.871	. .	29.290
	38	Anon. $15^h\ 27^m\ 22^s$.	8.9	3	III–VII	90	50	3.9	57.8	11.1	56.8	8.7	57.9	2.70	29.593	. .	29.026
	39	Lalande 28801 . .	7.0	2	I, IX	22	5	6.7	1.6	15.8	1.1	15.3	3.9	7.60	33.751	. .	33.141
	40	Lalande 28799 . .	8.5	3	III–VII	"	"	"	"	"	"	"	"	"	34.541	. .	33.961
	41	Weisse (2) XV, 1336	8.2	3	III–VII	21	20	8.8	4.3	16.8	2.2	18.2	5.2	9.25	32.400	. .	31.820
	42	Lalande 29341 . .	7.0	3	III–VII	24	25	5.0	59.8	13.7	56.6	11.2	0.0	4.38	36.077	. .	35.497
	43	B. A. C. 1300, S. P. .		3	IV–VI	303	45	1.9	53.8	11.1	54.8	7.9	55.7	0.87	26.323	. .	25.756
	44	O. Arg. S. 15671. .	7.5	3	III–VII	83	45	8.0	4.7	17.6	3.6	15.8	4.7	9.07	32.803	. .	32.234
	45	A Draconis		3	V–VII	349	50	3.8	57.6	14.1	56.0	10.7	59.0	3.53	27.197	. .	26.608
	46	B. A. C. 1448, S. P. .		3	IV½–V½	319	55	7.9	2.3	18.9	0.8	14.8	4.0	8.12	32.695	. .	32.126
	47	Anon. $16^h\ 46^m\ 37^s$.	7.0	3	III–VII	97	0	8.9	6.1	19.2	4.1	16.3	5.1	9.95	26.893	. .	26.328
	48	O. Arg. S. 16680. .	9.0	3	III–VII	81	25	5.1	1.4	13.2	1.0	10.3	1.1	5.35	27.781	. .	27.212
	49	B. A. C. 1751, S. P. .		3	V–VII	304	35	6.1	58.2	16.2	59.8	12.9	1.2	5.73	31.006	. .	30.447
	50	Lacaille 7435. . .	6.5	3	III–VII	94	40	5.2	0.2	15.1	2.1	11.7	1.0	5.88	28.549	. .	27.983
	51	Nadir		.	. .	200	0	6.4	2.4	16.2	3.3	12.5	3.9	7.45	30.660	. .	. .
19	52	Anon. $14^h\ 40^m\ 59^s$.	7.8	3	III–VII	21	30	7.1	2.3	15.2	59.2	16.7	4.8	7.55	34.324	−0.584	33.733
	53	Nadir		.	. .	200	0	3.8	56.6	11.6	56.6	10.5	1.9	3.50	30.544	. .	. .
	54	Lalande 27976 . .	7.8	3	III–VII	20	40	8.2	3.3	17.1	1.9	16.8	4.9	8.70	32.809	. .	32.217
	55	Rumker 5072 . .	7.0	3	III–VII	20	15	4.9	57.3	12.8	56.0	12.2	59.9	3.85	29.959	. .	29.367
	56	Anon. $15^h\ 26^m\ 52^s$.	8.9	3	V–IX	90	50	4.5	57.8	11.7	55.7	8.8	59.6	3.02	29.366	. .	28.794
	57	Lalande 29146 . .	7.5	3	III–VII	20	45	8.3	2.7	16.7	1.0	16.3	4.1	8.18	35.920	. .	35.328
	58	Anon. $16^h\ 3^m\ 36^s$.	8.0	2	III, V	85	40	6.9	2.5	16.2	1.5	14.7	3.4	7.53	37.054	. .	36.474
22	59	ε Bootis (1st *) . .		3	III–VII	31	15	3.8	58.0	10.1	54.2	12.6	1.2	3 32	26.850	−0.539	26.306
	60	Weisse XV, 1110 .	8.5	3	III–VII	60	45	5.0	56.8	11.2	54.8	11.1	3.0	3.65	33.055	. .	32.516
	61	Anon. $15^h\ 17^m\ 17^s$.	7.8	3	IV–VI	3	5	5.5	57.4	13.3	57.0	13.7	2.7	4.93	26.422	. .	25.879
	62	Lalande 28391 . .	9.0	3	III–VII	31	45	7.2	0.6	15.0	58.9	16.2	5.5	7.23	29.423	. .	28.879
	63	Lalande 28799 . .	8.3	2	I, IX	22	5	5.1	56.8	11.9	55.2	12.8	2.5	4.05	34.436	. .	33.861
	64	Lalande 28801 . .	7.0	3	III–VII	"	"	"	"	"	"	"	"	"	33.593	−0.539	33.047

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1874.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	+ 2 38.2	S. 1 32 38.5	1.5	+ 37 20 58.8	— 0.2	Y.	
2	29.896	85.0	85.4	+ 2 47.4	58 2 53.7	1 26.6	— 19 10 41.5	+ 14.3	Y.	
3	. .	. .	. .	+ 14.6	70 45 18.1	2 33.8	— 31 54 13.1	+ 16.5	Y.	
4	29.910	85.0	84.1	— 2 32.0	67 52 31.4	2 12.6	— 29 1 5.2	+ 15.6	Y.	
5	. .	. .	. .	— 1 53.3	52 23 11.7	1 10.5	— 13 30 43.4	+ 12.6	Y.	
6	. .	. .	. .	+ 43.1	S. 1 50 47.9	1.8	+ 37 2 49.1	+ 4.1	Y.	
7	. .	. .	. .	+ 2 0.9	N. 3 57 54.6	3.8	+ 42 51 37.2	+ 4.1	Y.	
8	29.920	84.8	82.7	— 1 28.3	39 16 27.5	44.5	+ 78 10 50.8	+ 1.3	Y.	
9	. .	. .	. .	+ 33.4	N. 29 14 20.8	30.5	+ 68 8 30.1	+ 3.2	Y.	
10	. .	. .	. .	+ 1 51.3	S. 0 41 48.2	0.7	+ 38 11 49.9	+ 6.6	Y.	
11	. .	. .	. .	+ 1 41.2	N. 30 8 12.7	31.7	+ 69 2 23.2	+ 4.8	Y.	
12	29.920	84.0	80.3	+ 3 54.7	60 6 2.8	1 34.8	+ 80 58 43.6	— 4.4	Y.	
13	. .	. .	. .	+ 33.7	38 49 19.9	44.0	+ 77 43 42.7	+ 5.9	Y.	
14	. .	. .	. .	+ 8.2	N. 43 19 52.0	51.6	+ 82 14 22.4	+ 6.5	Y.	
15	. .	. .	. .	. .		. .		. .	Y.	
16	29.926	78.0	74.0	+ 1 45.2	S. 59 6 51.6	1 32.3	— 20 14 45.1	+ 14.8	Y.	
17	. .	. .	. .	+ 35.9	15 20 40.8	15.2	+ 23 32 42.8	+ 2.4	Y.	
18	. .	. .	. .	+ 2 30.9	S. 1 32 38.7	1.5	+ 37 20 58.6	— 0.7	Y.	
19	29.940	78.0	73.0	— 44.7	N. 41 0 37.6	48.2	+ 79 55 4.6	— 6.4	Y.	
20	. .	. .	. .	+ 11.9	S. 70 45 15.7	2 37.8	— 31 54 14.7	+ 16.8	Y.	
21	29.950	77.2	71.4	— 1 59.5	52 23 6.7	1 12.1	— 13 30 40.0	+ 12.6	Y.	Faint.
22	. .	. .	. .	+ 31.3	11 45 37.9	11.6	+ 27 7 49.3	+ 5.2	Y.	
23	. .	. .	. .	— 2 44.1	S. 0 42 39.8	0.7	+ 38 11 18.3	+ 4.6	Y.	
24	29.974	76.2	69.8	+ 29.7	N. 29 14 20.2	31.3	+ 68 8 30.3	+ 2.4	Y.	
25	. .	. .	. .	— 1 2.3	S. 63 43 59.3	1 52.6	— 24 52 13.1	+ 12.3	Y.	
26	. .	. .	. .	+ 1 38.7	N. 30 8 11.5	32.4	+ 69 2 22.7	+ 4.0	Y.	
27	29.980	75.8	70.6	— 1 5.6	60 6 1.0	1 36.8	+ 80 58 43.4	— 3.7	Y.	
28	. .	. .	. .	— 1 33.0	67 11 28.8	2 12.0	+ 73 52 40.4	— 4.6	Y.	
29	. .	. .	. .	+ 2.8	43 19 50.6	52.8	+ 82 14 22.2	+ 5.7	Y.	
30	. .	. .	. .	+ 1 49.4	63 13 3.4	1 50.6	+ 77 51 27.2	— 6.1	Y.	
31	29.986	75.2	67.6	— 1 50.7	N. 66 6 47.7	2 6.1	+ 74 57 27.4	— 7.0	Y.	
32	. .	. .	. .	. .		. .		. .	Y.	
33	30.008	76.0	71.6	— 1 34.5	S. 49 58 31.0	1 6.3	— 11 5 58.5	+ 12.1	Y.	
34	. .	. .	. .	— 55.2	5 34 10.7	5.5	+ 33 19 22.6	+ 1.0	Y.	
35	30.014	75.2	69.1	— 1 20.1	40 43 48.0	48.2	— 1 50 57.4	+ 9.8	Y.	
36	. .	. .	. .	— 1 3.6	75 59 0.5	3 40.6	— 37 9 2.3	+ 17.1	Y.	
37	. .	. .	. .	+ 22.2	0 15 24.2	0.3	+ 38 38 14.3	+ 1.7	Y.	
38	30.014	75.0	67.7	+ 30.5	70 50 33.2	2 40.2	— 31 59 34.6	+ 15.6	Y.	
39	. .	. .	. .	— 1 38.4	2 3 29.2	2.0	+ 36 50 7.6	+ 3.0	Y.	
40	. .	. .	. .	— 2 4.1	2 3 3.5	2 0	+ 36 50 33.3	+ 3.0	Y.	
41	. .	. .	. .	— 57.0	1 19 12.2	1.3	+ 37 34 25.3	+ 3.4	Y.	
42	. .	. .	. .	— 2 52.3	S. 4 22 12.1	4.3	+ 34 31 22.4	+ 4.0	Y.	
43	30.016	73.5	66.8	+ 2 13.0	N. 76 12 46.1	3 45.1	+ 64 49 50.0	— 0.9	Y.	
44	. .	. .	. .	— 1 10.0	S. 63 43 59.1	1 53.6	— 24 52 13.9	+ 12.3	Y.	
45	. .	. .	. .	+ 1 46.3	N. 30 8 10.2	32.7	+ 69 2 21.7	+ 2.4	Y.	
46	30.018	73.0	66.5	— 1 6.6	N. 60 5 58.5	1 37.7	+ 80 58 45.0	— 2.4	Y.	
47	. .	. .	. .	+ 1 55.1	S. 77 2 5.0	3 59.5	— 38 12 25.7	+ 12.2	Y.	
48	. .	. .	. .	+ 1 27.4	S. 61 26 32.7	1 43.2	— 22 34 37.1	+ 9.6	Y.	
49	30.010	72.0	66.2	— 14.0	N. 75 25 8.3	3 33.0	+ 65 37 39.9	— 6.2	Y.	
50	. .	. .	. .	+ 1 2.9	S. 74 41 8.8	3 22.6	— 35 50 52.6	+ 8.4	Y.	
51	. .	. .	. .	. .		. .		. .	Y.	
52	30.062	76.8	73.4	— 1 57.0	1 28 10.6	1.4	+ 37 25 26.8	— 0.2	Y.	
53	. .	. .	. .	. .		. .		. .	Y.	
54	. .	. .	. .	— 1 9.5	0 38 58.2	0.6	+ 38 14 40.0	+ 1.1	Y.	
55	. .	. .	. .	+ 19.8	0 15 23.7	0.2	+ 38 38 14.9	+ 1.2	Y.	
56	30.078	76.0	72.5	+ 37.8	70 50 40.8	2 39.1	— 31 59 41.1	+ 15.8	Y.	
57	. .	. .	. .	— 2 47.0	0 42 21.2	0.7	+ 38 11 16.9	+ 2.8	Y.	
58	30.083	75.3	71.1	— 3 22.9	65 36 44.6	2 2.5	— 26 45 8.3	+ 13.4	Y.	
59	30.092	78.6	78.3	+ 1 55.8	11 16 59.1	11.0	+ 27 36 28.7	+ 1.6	Y.	
60	. .	. .	. .	— 1 18.9	S. 40 43 44.8	47.6	— 1 50 53.6	+ 9.8	Y.	
61	30.050	78.5	77.2	+ 2 9.1	N. 16 52 46.0	16.8	+ 55 46 41.6	— 2.1	Y.	
62	. .	. .	. .	+ 35.1	S. 11 45 42.4	11.5	+ 27 7 44.9	+ 3.2	Y.	
63	. .	. .	. .	— 2 1.0	2 3 3.0	2.0	+ 36 50 33.8	+ 1.8	Y.	
64	. .	. .	. .	— 1 35.5	S. 2 3 28.5	2.0	+ 36 50 8.3	+ 1.9	Y.	

DATE.	Number.		OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES. A.			B.	C.	D.	E.	F.	MICROMETER. Mean.	Observed.	Nadir cor.	Corr'd.
							°	′	″	″	″	″	″	″	″	r.	r.	r.
1874.																		
June 22	1		Lalande 28917 . .	8.5	3	V–IX	20	40	4.7	56.7	11.9	55.8	13.1	1.0	3.87	29.376	−0.539	28.819
	2		Weisse (2) XV, 1081	7.5	3	III–VII	52	30	8.0	58.7	15.8	58.3	14.8	6.1	6.95	32.655	. .	32.115
	3		B. A. C. 1300, S. P. .	6.5	3	IV–VI	303	44	61.1	50.2	68.9	50.0	67.8	55.0	58.83	26.392	. .	25.859
	4	A	Draconis	. .	2	IV½, V½	349	50	11.1	2.9	21.2	4.0	19.5	7.1	10.97	27.460	. .	26.918
	5		B. A. C. 1448, S. P. .	6.0	3	IV½–V½	319	55	8.2	58.8	18.9	56.4	16.1	4.3	7.12	32.741	. .	32.206
	6		Anon. 16h 47m 47s .	9.0	3	III–VII	95	55	7.7	2.2	17.0	0.9	14.8	5.2	7.97	33.346	. .	32.814
	7	ε	Ursæ Minoris . .	. .	3	1–5	336	40	9.5	0.8	20.0	59.8	17.3	6.1	8.92	30.608	. .	30.068
	8		B. A. C. 1619, S. P. .	. .	3	IV½–V½	316	45	4.8	54.8	13.1	53.3	11.2	0.8	3.00	27.039	. .	26.503
	9		B. A. C. 5887 . .	. .	3	IV–VI	347	0	6.5	57.9	17.2	58.5	13.0	3.4	6.08	32.721	. .	32.173
	10		B. A. C. 1751, S. P. .	. .	3	IV–VI	304	35	2.9	51.0	10.3	51.8	7.8	57.7	0.25	30.942	. .	30.410
	11		Anon. 17h 39m 5s .	7.5	3	III–VII	93	40	7.8	2.1	14.2	1.8	14.8	4.4	7.52	29.786	. .	29.254
	12		Weisse XVII, 929 .	. .	3	III–VII	50	15	4.4	56.2	11.2	54.1	10.4	2.1	3.07	35.679	. .	35.139
	13		Anon. 17h 58m 31s .	9.0	3	III–VII	95	30	3.4	57.6	11.8	55.0	8.2	59.2	2.53	35.963	. .	35.431
	14		Anon. 18h 7m 21s .	8.3	3	III–VII	21	15	7.4	1.5	15.2	0.8	15.7	5.1	7.62	35.807	. .	35.261
	15		Nadir	. .	.	. .	200	0	5.9	57.8	13.8	58.1	10.8	3.9	5 05	30.547	. .	. .
24	16		Lalande 28917 . .	. .	3	III–VII	20	40	8.3	0.0	15.2	58.9	16.2	4.5	7.18	29.571	−0.478	29.085
	17		Weisse (2) XV, 1367	. .	2	VII, IX	21	35	4.8	56.7	11.8	56.1	12.3	3.0	4.12	29.717	. .	29.215
	18		B. A. C. 1300, S. P. .	. .	3	IV–VI	303	45	5.2	54.2	13.8	55.2	11.3	1.2	3.48	26.610	. .	26.138
	19		Weisse (2) XVI, 889	7.5	3	III–VII	23	10	4.4	55.1	10.5	54.8	10.3	1.3	2.73	34.653	. .	34.168
	20		Anon. 16h 35m 24s .	7.8	3	III–VII	20	29	59.3	50.2	66.4	48.4	65.2	54.4	57.32	30.261	. .	35.775
	21	α	Camelopardi . .	. .	3	V, V½, VI	305	4	62.0	49.9	68.2	50.8	66.3	56.9	59.02	31.329	. .	30.865
	22		Lalande 30851 . .	8.0	3	III–VII	21	20	4.1	56.2	10.8	55.4	11.4	0.2	3.02	26.236	. .	25.751
	23	ε	Ursæ Minoris . .	. .	3	1–5	336	40	4.7	54.8	13.1	54.1	10.1	1.3	3.02	30.427	. .	29.948
	24		B. A. C. 1619, S. P. .	. .	3	IV½–V½	316	45	5.8	54.7	13.2	56.4	10.6	0.8	3.58	27.031	. .	26.556
	25		B. A. C. 5887 . .	. .	3	IV–VI	347	0	5.1	55.5	15.2	54.9	9.7	1.1	3.58	32.639	. .	32.152
	26		B. A. C. 1706 . .	. .	3	IV½–V½	313	55	8.9	58.1	18.0	58.8	15.2	4.9	7.32	34.309	. .	33.834
	27	ƒ	Draconis	. .	3	IV–VI	350	40	11.1	1.1	21.9	2.3	18.4	6.3	10.18	28.230	. .	27.745
	28		Lalande 32418 . .	8.3	3	III–VII	84	0	3.4	55.9	10.3	54.4	8.1	59.1	1.87	30.173	. .	29.700
	29		Anon. 17h 47m 9s .	. .	3	V–IX	88	35	6.1	59.0	12.8	56.9	10.4	2.8	4.67	24.013	. .	23.546
	30		B. A. C. 1879, S. P. .	. .	3	1–5	325	40	4.8	55.8	14.1	55.0	10.2	0.0	3.32	29.096	. .	28.620
	31	22	Camelopardi, S. P. .	. .	3	IV–VI	308	15	8.8	58.7	17.2	58.9	12.8	3.8	6.70	24.693	. .	24.223
	32		Nadir	. .	.	. .	200	0	6.8	57.9	15.0	58.8	10.6	4.2	5.55	30.504	. .	. .
26	33		Weisse (2) XV, 1367	. .	3	III–VII	21	35	8.0	1.2	15.9	1.2	15.5	6.0	7.97	29.883	−0.598	29.278
	34		B. A. C. 5378 . .	. .	3	III–VII	85	40	5.9	57.8	14.7	59.4	11.2	2.1	5.18	28.757	. .	28.164
	35		B. A. C. 1300, S. P. .	. .	3	IV–VI	303	45	8.7	58.1	17.9	0.0	14.2	3.0	6.98	26.812	−0.598	26.220
	36	α	Camelopardi, S. P. .	. .	3	IV–VI	305	5	7.7	55.8	14.8	57.3	10.4	2.1	4.68	31.273	−0.300	30.980
	37		Anon. 16h 50m 10s .	9.0	2	VII, IX	88	55	5.0	57.1	12.4	56.2	8.9	2.1	3.62	35.554	−0.598	34.974
	38		Lalande 31055 . .	. .	3	III–VII	63	45	4.7	55.2	11.2	56.1	7.8	1.1	2.68	32.730	. .	32.133
	39		B. A. C. 5887 . .	. .	3	IV–VI	347	0	6.9	57.8	18.2	58.6	12.2	2.8	6.08	32.789	. .	32.182
	40		Anon. 17h 29m 8s .	8.0	3	III–VII	94	4	61.9	52.5	68.8	53.1	65.1	56.6	59.67	29.172	. .	28.567
	41	ω	Draconis	. .	3	IV–VI	350	5	10.9	2.3	21.9	3.1	15.6	5.9	9.95	30.321	. .	29.715
	42		B. A. C. 6038 . .	6.5	2	V, VII	93	45	6.2	1.1	15.3	1.2	12.2	3.0	6.50	35.746	. .	35.153
	43		B. A. C. 1879, S. P. .	. .	3	1–5	325	40	3.9	54.5	13.7	53.9	9.2	58.1	2.22	29.147	. .	28.551
	44	22	Camelopardi, S. P. .	. .	3	IV–VI	308	20	4.8	54.1	13.8	53.9	8.1	58.5	2.20	34.224	. .	33.634
	45		Lalande 33952 . .	8.3	3	III–VII	22	0	4.1	55.8	11.1	55.2	8.2	59.2	2.27	29.061	. .	28.456
	46		B. A. C. 2095, S. P. .	. .	3	IV½–V½	318	35	4.1	54.2	13.8	54.2	8.2	58.5	2.17	26.593	. .	25.999
	47		Anon. 18h 33m 15s .	7.5	3	III–VII	21	15	3.0	54.2	10.2	56.0	8.2	58.6	1.70	33.672	. .	33.067
	48		Nadir	. .	.	. .	200	0	2.8	52.9	9.8	55.0	4.4	58.8	0.62	30.469	. .	. .
29	49		Anon. 15h 19m 29s .	8.5	1	IX	20	35	2.9	52.9	8.2	50.9	8.3	0.0	0.53	32.679	−0.682	32.041
	50		Nadir	. .	.	. .	199	59	62.8	50.8	68.0	50.9	66.0	61.0	59.92	30.528	. .	. .
	51		Lacaille 6716. . .	8.0	3	III–VII	98	35	11.2	3.4	17.3	1.4	16.8	8.8	9.82	27.095	. .	26.421
	52	α	Camelopardi, S. P. .	. .	3	IV–VI	305	5	4.0	51.1	9.3	50.0	7.1	0.1	0.27	31.709	. .	31.034
	53		Anon. 16h 48m 10s .	8.0	3	III–VII	90	10	4.0	55.4	9.4	53.4	7.7	0.7	1.77	30.454	. .	29.778
	54		Weisse XVI, 1033 .	8.5	3	III–VII	68	0	4.8	54.2	11.1	54.6	8.8	3.1	2.77	33.255	. .	32.575
	55		O. Arg. S. 16680. .	9.0	3	III–VII	81	25	6.8	58.9	12.2	57.3	10.4	4.3	4.98	27.796	. .	27.118
	56		Lacaille 7324 . .	6.5	3	III–VII	92	30	6.4	58.0	13.1	57.4	9.5	3.9	4.72	36.325	. .	35.640
	57		Anon. 17h 31m 13s .	9.0	3	III–VII	91	0	5.6	57.0	12.3	55.2	10.0	2.8	3.82	32.789	. .	32.113
	58		Anon. 17h 31m 44s .	7.5	3	V–IX	"	"	"	"	"	"	"	"	"	31.215	. .	30.545
	59		Lacaille 7464 . .	7.0	3	III–VII	93	50	4.6	55.8	9.7	54.2	8.0	1.8	2.35	31.315	. .	30.640
	60		Anon. 17h 44m 50s .	7.6	2	VII, IX	"	"	"	"	"	"	"	"	"	31.376	. .	30.716
	61		Anon. 17h 53m 58s .	8.5	3	V–IX	83	0	5.0	56.8	10.1	53.5	7.7	1.7	2.47	28.834	. .	28.160
	62	22	Camelopardi, S. P. .	. .	3	IV–VI	308	19	63.2	51.7	70.0	50.5	65.3	58.1	59.80	34.360	. .	33.686
	63		Anon. 18h 12m 17s .	9.0	3	V–IX	21	55	2.1	52.9	8.8	52.0	7.1	0.1	1.00	31.143	. .	30.444
	64		B. A. C. 2069, S. P. .	5.5	3	IV½–V½	317	0	7.7	56.8	15.1	57.3	11.6	4.1	5.43	29.107	−0.682	28.428

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1874.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	+ 37.0	S. 0 40 40.9	0.7	+ 38 12 57.2	+ 1.8	Y.	
2	30.090	78.2	75.8	− 1 6.2	S. 32 29 0.7	35.3	+ 6 24 2.8	+ 7.7	Y.	
3	. .	. .	75.3	+ 2 9.8	N. 76 12 51.4	3 42.0	+ 64 49 47.8	− 0.1	Y.	
4	. .	. .	. .	+ 1 37.6	30 8 11.4	32.3	+ 69 2 22.5	+ 0.9	Y.	
5	30.082	78.0	75.0	− 1 9.1	N. 60 6 2.0	1 36.3	+ 80 58 42.9	− 1.2	Y.	
6	. .	. .	. .	− 1 28.2	S. 75 53 39.8	3 37.1	− 37 3 38.1	+ 12.5	Y.	
7	. .	. .	. .	− 2.1	N. 43 19 53.2	52.4	+ 82 14 24.4	+ 2.6	Y.	
8	30.080	77.7	74.3	+ 1 49.6	63 13 7.4	1 49.7	+ 77 51 24.1	− 3.5	Y.	
9	. .	. .	. .	− 1 8.1	33 1 2.0	36.2	+ 71 55 17.0	+ 4.0	Y.	
10	. .	. .	73.8	− 12.9	N. 75 25 12.6	3 30.4	+ 65 37 38.2	− 5.0	Y.	
11	. .	. .	. .	+ 23.4	S. 73 40 30.9	3 7.7	− 34 49 59.8	+ 8.8	Y.	
12	. .	. .	. .	− 2 41.1	30 12 22.0	32.5	+ 8 40 44.3	+ 7.0	Y.	
13	30.080	77.0	72.8	− 2 50.2	75 27 12.3	3 31.2	− 36 37 4.7	+ 7.3	Y.	
14	. .	. .	. .	− 2 44.9	1 12 22.7	1.2	+ 37 41 14.9	+ 6.8	Y.	
15	. .	. .	. .	. .		. .		. .	Y.	
16	30.063	83.0	79.4	+ 28.7	0 40 35.8	0.7	+ 38 13 2.3	+ 1.5	Y.	
17	. .	. .	. .	+ 24.6	S. 1 35 28.7	1.5	+ 37 18 8.6	+ 1.9	Y.	
18	30.056	82.2	77.8	− 2 1.0	N. 76 12 55.5	3 40.7	+ 64 49 45.0	+ 0.1	Y.	
19	. .	. .	. .	− 2 10.6	S. 3 7 52.1	3.0	+ 35 45 43.7	+ 3.4	Y.	
20	. .	. .	. .	− 3 1.0	S. 0 26 56.3	0.4	+ 38 26 42.1	+ 3.3	Y.	
21	30.060	81.5	77.8	− 27.1	N. 74 55 28.1	3 21.7	+ 66 7 31.4	− 1.7	Y.	
22	. .	. .	. .	+ 2 13.2	S. 1 22 16.2	1.3	+ 37 31 21.3	+ 4.0	Y.	
23	. .	. .	. .	+ 1.6	N. 43 19 55.4	52.1	+ 82 14 26.3	+ 2.1	Y.	
24	30.070	81.0	77.0	+ 1 47.9	63 13 8.5	1 49.1	+ 77 51 23.6	− 3.1	Y.	
25	. .	. .	. .	− 1 7.4	33 1 3.9	36.0	+ 71 55 18.7	+ 3.5	Y.	
26	. .	. .	. .	− 2 0.2	66 6 52.8	2 4.4	+ 74 57 24.0	− 4.0	Y.	
27	. .	. .	. .	+ 1 10.6	N. 29 18 39.2	31.2	+ 68 12 49.2	+ 4.4	Y.	
28	30.064	80.2	74.8	+ 9.4	S. 64 0 11.3	1 53.4	− 25 8 25.9	+ 8.5	Y.	
29	. .	. .	. .	+ 3 22.2	S. 68 38 26.9	2 21.1	− 29 47 9.2	+ 8.6	Y.	
30	30.070	78.8	74.1	+ 43.3	N. 54 19 13.4	1 17.3	+ 86 45 50.5	− 5.9	Y.	
31	. .	. .	73.8	+ 3 1.1	N. 71 41 52.2	2 46.5	+ 69 21 42.5	− 6.6	Y.	
32	. .	. .	. .	. .		. .		. .	Y.	
33	29.760	81.0	76.8	+ 22.6	S. 1 35 30.6	1.5	+ 37 18 6.7	+ 1.6	Y.	
34	. .	. .	. .	+ 57.5	S. 65 41 2.7	2 0.6	− 26 49 24.5	+ 13.9	Y.	
35	29.760	81.0	76.6	+ 1 58.5	N. 76 12 54.6	3 39.0	+ 64 49 47.6	+ 0.3	Y.	
36	29.760	80.7	75.6	− 30.7	N. 74 55 26.0	3 20.5	+ 66 7 34.7	− 1.5	Y.	North wire.
37	. .	. .	. .	− 2 35.9	S. 68 52 27.7	2 21.1	− 30 1 10.0	+ 12.0	Y.	
38	. .	. .	. .	− 1 6.8	S. 43 43 55.9	52.5	− 4 51 9.6	+ 8.5	Y.	
39	29.764	80.0	75.2	− 1 8.4	N. 33 1 2.3	35.7	+ 71 55 16.8	+ 2.9	Y.	
40	. .	. .	. .	+ 44.9	S. 74 5 44.6	3 9.8	− 35 15 15.6	+ 10.0	Y.	
41	. .	. .	. .	+ 8.9	N. 29 54 41.1	31.6	+ 68 48 51.5	+ 4.1	Y.	
42	29.764	80.0	74.9	− 2 41.5	S. 73 42 25.0	3 5.3	− 34 51 51.5	+ 8.8	Y.	
43	. .	. .	. .	+ 45.4	N. 54 19 12.4	1 16.5	+ 86 45 52.3	− 5.4	Y.	
44	29.770	79.5	74.1	− 1 53.9	N. 71 41 51.7	2 44.7	+ 69 21 44.8	− 6.2	Y.	
45	. .	. .	. .	+ 48.4	S. 2 0 50.6	1.9	+ 36 52 46.3	+ 6.0	Y.	
46	. .	. .	. .	+ 2 5.4	N. 61 22 52.5	1 40.6	+ 79 41 48.1	− 5.8	Y.	
47	29.766	79.2	74.0	− 1 36.1	S. 1 13 25.6	1.2	+ 37 40 12.0	+ 5.1	Y.	
48	. .	. .	. .	. .		. .		. .	Y.	
49	29.828	84.8	81.8	− 1 4.0	0 33 56.6	0.5	+ 38 19 41.7	− 0.5	Y.	
50	. .	. .	. .	. .		. .		. .	Y.	
51	29.830	84.3	81.5	+ 1 52.2	S. 78 37 2.0	4 22.5	− 39 47 45.7	+ 16.4	Y.	
52	29.832	84.0	80.7	− 32.4	N. 74 55 32.1	3 19.1	+ 66 7 30.0	− 1.0	Y.	
53	. .	. .	. .	+ 7.0	S. 70 10 8.7	2 29.8	− 31 18 59.7	+ 12.5	Y.	
54	. .	. .	. .	− 1 20.7	47 58 42.0	1 0.6	− 9 6 3.8	+ 8.9	Y.	
55	29.838	84.0	79.5	+ 1 30.3	61 26 35.3	1 40.0	− 22 34 36.5	+ 9.8	Y.	
56	. .	. .	. .	− 2 57.1	72 27 7.7	2 50.7	− 33 36 19.6	+ 10.5	Y.	
57	. .	. .	. .	− 1 6.2	70 58 57.6	2 36.9	− 32 7 55.7	+ 9.8	Y.	
58	29.834	83.5	79.5	− 17.1	70 59 46.8	2 37.0	− 32 8 45.0	+ 9.8	Y.	
59	. .	. .	. .	− 20.1	73 49 42.3	3 5.7	− 34 59 9.2	+ 9.1	Y.	
60	. .	. .	. .	− 22.4	73 49 39.9	3 5.7	− 34 59 6.8	+ 9.0	Y.	
61	. .	. .	. .	+ 57.7	S. 63 1 0.1	1 46.9	− 24 9 8.2	+ 7.7	Y.	
62	. .	. .	79.0	− 1 55.5	N. 71 41 55.7	2 43.6	+ 69 21 41.9	− 5.5	Y.	
63	. .	. .	. .	− 13.9	S. 1 54 47.1	1.8	+ 36 58 49.9	+ 5.1	Y.	
64	29.834	82.5	78.4	+ 49.3	N. 62 59 5.3	1 46.9	+ 78 5 29.0	− 6.1	Y.	

DATE.	Number.		OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES. A.			B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
							°	′	″	″	″	″	″	″	″	r.	r.	r.
1874.																		
July 3	1	A	Scorpii	. .	3	III–VII	83	50	8.5	0.7	16.2	1.3	13.2	5.1	7.50	32.908	−0.570	32.343
	2		Lacaille 6716. . .	. .	3	III–VII	98	36	7.8	0.8	15.8	0.3	12.4	4.8	6.98	26.975	. .	26.413
	3		Anon. $16^h\ 12^m\ 5^s$.	8.5	3	III–VII	21	45	1 2	53.9	8.8	54.0	7.2	59.4	0.75	35.717	. .	35.140
	4		B. A. C. 5600 . .	7.5	3	V–IX	86	5	7.0	59.3	16.9	2.5	12.4	3.9	7.00	31.263	. .	30.703
	5	a	Camelopardi, S. P. .	. .	3	IV–VI	305	5	2.7	54.8	10.9	55.1	7.0	58.3	1.47	31.433	. .	30.870
	6		B. A. C. 5700 (1st *)	. .	3	V–IX	78	15	9.9	1.8	17.8	3.8	15.6	6.3	9.20	35.432	. .	34.868
	7		Anon. $16^h\ 57^m\ 44^s$.	8.0	3	III–VII	84	10	4.8	55.9	12.8	57.0	7.8	1.4	3.28	30.904	. .	30.339
	8		Anon. $17^h\ 5^m\ 32^s$.	9.0	2	V, IX	94	0	4.8	55.7	11.8	56.3	7.2	0.4	2.70	31.367	. .	30.814
	9		B. A. C. 5887. . .	. .	3	IV–VI	347	0	7.1	59.1	18.0	0.9	11.5	4.0	6.77	32.925	. .	32.346
	10		Anon. $17^h\ 23^m\ 30^s$.	8.8	3	III–VII	90	40	8.8	2.5	18.2	2.5	11.7	4.9	8.10	35.368	. .	34.804
	11		Anon. $17^h\ 32^m\ 20^s$.	9.0	3	V–IX	93	55	7.2	59.2	15.1	59.3	10.4	3.0	5.70	29.716	. .	29.160
	12		Anon. $17^h\ 39^m\ 54^s$.	7.5	3	III–VII	93	20	5.0	57.8	12.2	59.1	7.8	0.5	3.73	25.590	. .	25.027
	13		Anon. $17^h\ 46^m\ 39^s$.	7.5	1	IX	21	10	3.9	56.8	11.9	58.5	9.2	1.9	3.70	32.390	. .	31.781
	14		Anon. $17^h\ 57^m\ 12^s$.	9.0	3	III–VII	82	30	4.2	56.5	11.2	58.1	7.2	0.2	2.90	34.359	. .	33 793
	15		Anon. $18^h\ 9^m\ 29^s$.	8.8	2	VII, IX	93	0	4.7	56.6	10.8	56.8	4.8	59.4	2.18	33.689	. .	33.139
	16		Anon. $18^h\ 17^m\ 51^s$.	7.0	3	III–VII	22	40	2.8	56.2	11.1	57.4	7.7	1.2	2.73	32.444	. .	31.867
	17		Nadir	. .	.	. .	200	0	1.2	53.8	9.7	55.8	5.4	59.4	0.88	30.447	. .	. .
6	18		Anon. $16^h\ 13^m\ 2^s$.	8.3	3	III–VII	21	40	5.9	0.8	15.1	1.2	13.7	4.3	6.83	31.387	−0.701	30.679
	19		B. A. C. 5600. . .	6.7	3	III–VII	86	5	1.8	55.4	11.0	57.3	7.3	58.4	1.87	31.165	. .	30.469
	20		O. Arg. S. 15896. .	8.0	2	VII, IX	"	"	"	"	"	"	"	"	"	31.053	. .	30.365
	21	a	Camelopardi, S. P. .	. .	3	IV–VI	305	5	8.8	0.2	17.6	2.8	13.3	4.2	7.82	31.687	. .	30.993
	22		B. A. C. 5700 (1st *)	. .	1	IX	78	15	3.1	56.9	12.1	57.9	8.2	59.7	2.98	35.214	. .	34.529
	23		Anon. $17^h\ 5^m\ 33^s$.	9.0	3	III–VII	94	0	2.7	56.4	11.6	57.2	7.6	58.9	2.40	31.678	. .	30.985
	24		O. Arg. S. 16680. .	8.5	3	III–VII	81	25	6.7	0.4	15.2	0.8	10.2	2.0	5.88	27.793	. .	27.096
	25		Anon. $17^h\ 30^m\ 19^s$.	9.0	3	III–VII	79	30	4.2	58.9	14.9	58.9	9.9	1.1	4.65	35.528	. .	34.831
	26		Anon. $17^h\ 37^m\ 41^s$.	8.3	3	III–VII	80	30	5.8	2.3	16.9	1.3	11.4	2.3	6.67	28.455	. .	27.758
	27		Anon. $17^h\ 45^m\ 9^s$.	8.0	3	III–VII	93	30	6.9	3.2	15.9	3.4	11.8	3.2	7.40	30.502	. .	29.808
	28		Anon. $17^h\ 45^m\ 58^s$.	7.7	2	VII, IX	"	"	"	"	"	"	"	"	"	26.120	. .	25.440
	29		O. Arg. S. 17503. .	9.5	3	III–VII	74	30	5.8	1.4	16.4	2.9	12.0	2 0	6.75	28.626	. .	27.928
	30		Anon. $18^h\ 5^m\ 4^s$. .	8.0	3	III–VII	22	25	5.0	58.8	15.5	0.3	11.2	2.5	5.55	33.018	. .	32.310
	31		Lalande 33692 . .	8.3	3	III–VII	21	30	0.9	55.2	10.9	56.9	7.8	58.9	1.77	28.227	. .	27.519
	32		Anon. $18^h\ 16^m\ 25^s$.	8.8	2	III, VII	88	25	6.2	2.1	15.2	0.7	10.0	2.2	6.07	27.765	. .	27.071
	33		Anon. $18^h\ 16^m\ 46^s$.	8.8	1	V	"	"	"	"	"	"	"	"	"	24.987	. .	24.286
	34		Anon. $18^h\ 25^m\ 10^s$.	. .	3	III–VII	95	45	5.9	3.2	18.2	3.5	12.2	3.4	7.73	33.156	. .	32.462
	35		Nadir	. .	.	. .	200	0	6.8	0.7	16.0	2.7	11.2	5.0	7.07	30.776	. .	. .
8	36		B. A. C. 5411 . .	5.5	3	III–VII	22	10	6.9	57.8	14.2	57.5	14.1	5.8	6.05	33.698	−0.647	33.044
	37		Anon. $16^h\ 35^m\ 23^s$.	7.8	3	III–VII	20	30	4.9	55.8	12.4	54.8	11.8	1.9	3.60	36.777	. .	36.122
	38	a	Camelopardi, S. P. .	. .	3	IV–VI	305	5	7.3	56.7	13.9	56.8	12.2	4.2	5.18	31.727	. .	31.087
	39		Anon. $16^h\ 50^m\ 11^s$.	8.8	3	V–IX	88	55	7.6	0.6	14.3	58.2	13.5	6.2	6.73	35.789	. .	35.153
	40		Lalande 31790 . .	8.0	3	III–VII	21	35	5.8	56.9	12.7	56.2	12.8	3.9	4.72	28.459	. .	27.805
	41		Weisse (2) XVII, 831	7.5	3	III–VII	23	0	6.7	58.4	13.8	56.9	13.3	5.1	5.70	27.391	. .	26.737
	42		Anon. $17^h\ 35^m\ 3^s$.	7.0	3	III–VII	94	5	7.5	58.7	14.3	58.1	12.3	4.3	5.87	31.350	. .	30.710
	43		Weisse (2) XVII, 1394	. .	2	I, IX	22	45	7.7	0.0	15.1	58.1	14.8	6.2	6.98	32.582	. .	31.899
	44		Weisse (2) XVII, 1398	. .	3	III–VII	"	"	"	"	"	"	"	"	"	36.728	. .	36.074
	45		Anon. $17^h\ 53^m\ 42^s$.	7.6	3	III–VII	95	10	8.8	0.6	18.2	0.2	15.7	7.0	8.42	27.886	. .	27.246
	46		Weisse (2) XVIII, 44	8.0	3	III–VII	22	30	3.2	54.9	10.7	53 3	9.4	1.3	2.13	32.027	. .	31.373
	47		Anon. $18^h\ 8^m\ 48^s$.	. .	3	V–IX	23	45	8.5	0.4	15.8	53.4	14.8	5.2	7.18	33.100	. .	32.435
	48		Nadir	. .	.	. .	199	59	60.8	50.3	66.9	50.5	64.5	58.9	58.65	30.455	. .	. .
14	49		Anon. $16^h\ 13^m\ 23^s$.	8.5	3	III–VII	21	10	6.2	57.2	12.9	57.2	13.6	3.9	5.17	34.110	−0.598	33.505
	50		B. A. C. 1448, S. P. .	. .	3	IV½–V½	319	55	3.2	52.2	12.2	52.7	7.7	59.2	1.20	32.663	. .	32.069
	51	a	Camelopardi, S. P. .	. .	3	IV–VI	305	5	5.8	53.2	12.8	55.8	9.2	0.8	2.93	31.495	. .	30.904
	52		B. A. C. 1510, S. P. .	. .	3	IV½–V½	312	45	6.7	55.3	15.9	57.1	11.2	2.1	4.72	24.149	. .	23.553
	53		O. Arg. S. 16680 .	. .	3	III–VII	81	25	3.6	53.1	11.0	54.5	6.1	0.0	1.38	27.508	. .	26.914
	54		O. Arg. S. 16952. .	7.5	3	III–VII	77	0	8.2	0.1	16.2	0.1	12.3	4.7	6.93	30.331	. .	29.736
	55		O. Arg. S. 17133. .	8.3	3	III–VII	80	35	8.0	1.6	16.8	1.1	14.2	5.8	7.92	35.804	. .	32.210
	56		Anon. $17^h\ 37^m\ 39^s$.	8.3	2	VII, IX	"	"	"	"	"	"	"	"	"	38.026	. .	37.437
	57		Anon. $17^h\ 45^m\ 38^s$.	8.5	3	III–VII	93	20	3.7	56.2	9.1	55.0	7.1	58.7	1.63	31.739	. .	31.118
	58		B. A. C. 6046 . .	. .	2	VII, IX	"	"	"	"	"	"	"	"	"	36.463	. .	35.883
	59		Anon. $17^h\ 57^m\ 32^s$.	8.3	3	III–VII	96	15	7.9	1.4	13.5	1.2	14.2	5.9	8.18	28.267	. .	27.676
	60	22	Camelopardi, S. P. .	. .	3	IV–VI	308	20	7.6	58.4	17.7	58.1	12.4	4.0	6.37	34.407	. .	33.817
	61		Anon. $18^h\ 12^m\ 22^s$.	8.2	3	V–IX	21	55	7.6	1.8	13.0	2.4	14.8	6.6	8.53	31.424	. .	30.809
	62		Anon. $18^h\ 22^m\ 32^s$.	. .	2	I, IX	22	55	8.2	2.2	17.1	1.1	15.2	6.1	8.32	28.156	. .	27.522
	63		Anon. $18^h\ 22^m\ 37^s$.	. .	3	IV–VI	"	"	"	"	"	"	"	"	"	33.281	. .	32.681
	64		Lalande 34581 . .	7.2	3	III–VII	21	0	3.8	56.3	11.8	57.0	9.9	2.2	3.50	34.944	. .	34.339
	65		Nadir	. .	.	. .	200	0	4.8	55.1	11.5	56.8	7.1	2.2	2.92	30.539	−0.598	. .

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1874.0.	Observer.	REMARKS.
	in.	°	°	′ ″	″ ′ ″	′ ″	° ′ ″	″		
1	30.026	78.3	73.7	− 1 13.4	S. 63 48 54.1	1 52.5	− 24 57 7.8	+ 14.1	Y.	One star.
2	. .	. .	. .	+ 1 52.4	78 36 59.4	4 28.5	− 39 47 49.1	+ 16.7	Y.	
3	. .	. .	. .	− 2 41.1	1 42 19.7	1.7	+ 37 11 17.4	+ 0.6	Y.	
4	. .	. .	. .	− 22.0	S. 66 4 45.0	2 5.1	− 27 13 11.3	+ 12.5	Y.	
5	30.028	77.2	71.4	− 27.2	N. 74 55 25.8	3 23.9	+ 66 7 31.5	− 0.2	Y.	
6	. .	. .	. .	− 2 32.6	S. 58 12 36.6	1 29.9	− 19 20 27.7	+ 10.5	Y.	
7	. .	. .	. .	− 10.6	64 9 52.7	1 54.8	− 25 18 8.7	+ 11.1	Y.	
8	30.020	76.7	70.5	− 25.5	S. 73 59 37.2	3 12.1	− 35 9 10.5	+ 12.1	Y.	
9	. .	. .	. .	− 1 13.5	N. 33 1 6.8	36.3	+ 71 55 21.9	+ 0.7	Y.	
10	. .	. .	70.0	− 2 30.6	S. 70 37 37.5	2 37.6	− 31 46 36.3	+ 10.4	Y.	
11	. .	. .	. .	+ 26.3	73 55 32.0	3 11.5	− 35 5 4.7	+ 10.2	Y.	
12	30 014	76.0	69.6	+ 2 35.9	73 22 39.6	3 5.1	− 34 32 5.9	+ 9.6	Y.	
13	. .	. .	. .	− 55.8	1 9 7.9	1.1	+ 37 44 29.8	+ 3.3	Y.	
14	. .	. .	. .	− 1 58.9	62 28 4.0	1 47.0	− 23 36 12.2	+ 7.4	Y.	
15	. .	. .	. .	− 1 38.4	72 58 23.8	3 0.8	− 34 7 45.8	+ 7.2	Y.	
16	. .	. .	. .	− 58.5	2 39 4.2	2.6	+ 36 14 32.0	+ 3.9	Y.	
17	. .	. .	. .	. .		. .		. .	Y.	
18	30.132	76.2	71.0	− 21.3	1 39 45.6	1.6	+ 37 13 51.6	0.0	Y.	
19	. .	. .	. .	− 14.7	66 4 47.2	2 5.7	− 27 13 14.1	+ 12.6	Y.	
20	. .	. .	. .	− 11.4	S. 66 4 50.4	2 5.8	− 27 13 17.4	+ 12.6	Y.	
21	30.130	75.8	70.4	− 31.1	N. 74 55 23.3	3 25.0	+ 66 7 32.9	+ 0.1	Y.	
22	. .	. .	. .	− 2 21.9	S. 58 12 41.0	1 30.3	− 19 20 32.5	+ 10.5	Y.	
23	. .	. .	. .	− 30.9	73 59 31.5	3 13.1	− 35 9 5.8	+ 12.3	Y.	
24	30.136	75.2	69.5	+ 1 31.0	61 26 36.9	1 42.9	− 22 34 41.0	+ 9.8	Y.	
25	. .	. .	. .	− 2 31.4	59 27 32.7	1 35.0	− 20 35 28.9	+ 8.7	Y.	Faint; uncertain.
26	. .	. .	. .	+ 1 10.2	60 31 16.9	1 39.2	− 21 39 17.3	+ 8.4	Y.	
27	. .	. .	. .	+ 6.0	73 30 13.4	3 7.5	− 34 39 42.1	+ 9.4	Y.	
28	30.136	74.8	69.0	+ 2 22.9	73 32 30.3	3 8.0	− 34 41 59.5	+ 9.4	Y.	
29	. .	. .	. .	+ 1 4.9	54 31 11.7	1 18.8	− 15 38 51.7	+ 6.8	Y.	
30	. .	. .	. .	− 1 12.4	2 23 53.1	2.3	+ 36 29 43.4	+ 2.8	Y.	
31	. .	. .	. .	+ 1 17.8	1 31 19.5	1.5	+ 37 22 17.8	+ 2.9	Y.	
32	. .	. .	. .	+ 1 31.8	68 26 37.8	2 21.7	− 29 35 20.7	+ 6.6	Y.	
33	. .	. .	. .	+ 2 59.1	68 28 5.2	2 21.8	− 29 36 48.2	+ 6.5	Y.	
34	30.136	74.0	68.0	− 1 17.2	75 43 50.5	3 37.8	− 36 53 49.5	+ 6.3	Y.	
35	. .	. .	. .	. .		. .		. .	Y.	
36	29.866	80.8	79.3	− 1 35.4	2 8 30.6	2.0	+ 36 45 6.2	− 0.4	Y.	
37	. .	. .	. .	− 3 11.9	S. 0 26 51.7	0.4	+ 38 26 46.7	+ 0.1	Y.	
38	29.860	80.5	78.7	− 34.1	N. 74 55 28.9	3 20.0	+ 66 7 32.3	+ 0.4	Y.	
39	. .	. .	. .	− 2 41.5	S. 68 52 25.2	2 20.7	− 30 1 7.1	+ 12.7	Y.	
40	. .	. .	. .	+ 1 8.8	1 36 13.5	1.5	+ 37 17 23.8	+ 1.4	Y.	
41	. .	. .	. .	+ 1 42.3	3 1 48.0	2.9	+ 35 51 47.9	+ 1.7	Y.	
42	29.864	80.0	77.4	− 22.2	74 4 43.6	3 9.7	− 35 14 14.5	+ 10.5	Y.	
43	. .	. .	. .	− 59.5	2 44 7.5	2.6	+ 36 9 28.7	+ 1.9	Y.	
44	. .	. .	. .	− 3 10.4	2 41 56.6	2.6	+ 36 11 39.6	+ 1.9	Y.	
45	29.864	79.8	77.7	+ 1 26.3	75 11 34.7	3 24.1	− 36 21 20.0	+ 9.2	Y.	
46	. .	. .	. .	− 43.0	2 29 19.1	2.4	+ 36 24 17.3	+ 2.3	Y.	
47	. .	. .	. .	− 1 16.3	3 43 50.8	3.6	+ 35 9 44.4	+ 2.5	Y.	
48	. .	. .	. .	. .		. .		. .	Y.	
49	30.230	82.0	78.2	− 1 49.9	S. 1 8 15.3	1.1	+ 37 45 22.4	− 1.5	Y.	
50	. .	. .	. .	− 1 4.8	N. 60 6 3.6	1 36.2	+ 80 58 41.4	+ 3.1	Y.	
51	. .	. .	. .	− 28.3	74 55 25.4	3 22.9	+ 66 7 32.9	+ 1.2	Y.	
52	30.228	81.2	77.2	+ 3 22.1	N. 67 11 33.2	2 11.3	+ 73 52 36.7	+ 1.8	Y.	
53	. .	. .	. .	+ 1 36.7	S. 61 26 38.1	1 41 9	− 22 34 41.2	+ 10.0	Y.	
54	30.232	81.0	76.5	+ 8.3	57 0 15.2	1 25.5	− 18 8 1.9	+ 8.5	Y.	
55	. .	. .	. .	− 2 43.3	60 32 24.6	1 38.2	− 21 40 24.0	+ 8.6	Y.	
56	. .	. .	. .	− 3 53.0	60 31 14.9	1 38.2	− 21 39 14.3	+ 8.6	Y.	
57	. .	. .	. .	− 36.0	73 19 25.7	3 3.5	− 34 28 50.4	+ 10.1	Y.	
58	30.228	80.5	76.2	− 3 4.4	73 16 57.3	3 3.1	− 34 26 21.6	+ 10.0	Y.	
59	. .	. .	. .	+ 1 12.8	S. 76 16 21.0	3 43.6	− 37 26 25.8	+ 9.5	Y.	
60	30.228	80.2	75.8	− 1 59.6	N. 71 41 53.3	2 46.7	+ 69 21 41.2	− 2.1	Y.	
61	. .	. .	. .	− 25.3	S. 1 54 43.2	1.9	+ 36 58 53.7	+ 0.9	Y.	
62	. .	. .	. .	+ 1 17.7	2 56 26.0	2.9	+ 35 57 9.9	+ 1.1	Y.	
63	. .	. .	. .	− 1 24.0	2 53 44.3	2.8	+ 35 59 51.7	+ 1.1	Y.	
64	30.222	79.8	75.2	− 2 16.0	S. 0 57 47.5	0.9	+ 37 55 50.4	+ 1.1	Y.	
65	. .	. .	. .	. .		. .		. .	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES. A.			B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed	Nadir cor.	Corr'd.
						°	′	″	″	″	″	″	″	″	r.	r.	r.
1874.																	
July 17	1	B. A. C. 5411 . .	5.5	3	III–VII	22	10	6.6	57.9	14.8	59.2	11.3	2.6	5.40	33.704	−0.597	33.100
	2	Nadir	. .	.	. .	200	0	3.0	54.0	10.3	55.3	5.0	0.3	1.32	30.487	. .	. .
18	3	O. Arg. S. 15847 .	8.5	3	III–VII	83	25	7.1	59.1	14.8	0.1	10.1	3.5	5.78	27.995	−0.417	27.582
	4	Anon. $16^h\ 48^m\ 12^s$.	7.7	3	V–IX	90	10	7.8	59 3	15.1	59 3	11.2	2.9	6.02	30.529	. .	30.122
	5	Anon. $17^h\ 29^m\ 9^s$.	8.0	2	IV, VI	94	5	4.7	55.8	12.2	57.7	8.2	0.1	3.12	29.267	. .	28 860
	6	Lalande 32322 . .	8.0	3	V–IX	21	35	5.8	58.9	14.1	59.4	12.2	4.2	5.77	27.392	. .	26.958
	7	Lalande 32631 . .	7.5	3	V–IX	20	35	3.3	55.2	12.9	55.1	9.3	59.5	2.55	26.906	. .	26.469
	8	Anon. $17^h\ 53^m\ 6^s$.	8.5	3	III–VII	58	50	3.7	55.8	11.2	55.9	8.4	2.2	2.87	28.733	. .	28 316
	9	22 Camelopardi, S. P. .	. .	3	IV–VI	308	20	6.9	57.5	16.8	58.8	11.1	2.8	5.65	34.276	. .	33.867
	10	B. A. C. 2069, S. P. .	. .	3	IV½–V½	317	0	5.4	55.7	14.8	56.9	9.2	1.2	3.87	28.878	. .	28.464
	11	Anon. $18^h\ 28^m\ 33^s$.	. .	3	V–IX	21	35	1.9	54.8	10.2	55.2	7.2	58.9	1.37	33.573	. .	33.137
	12	B. A. C. 6376 . .	. .	3	III–VII	78	35	2.2	55.9	11.1	57.1	6.3	58.7	1.88	28.080	. .	27.666
	13	50 Draconis	. .	3	IV½–V½	343	35	2.7	55.8	13.9	oblit.	9.7	0.1	2.93	26.118	. .	25.698
	14	Nadir	. .	.	. .	200	0	7.8	1.1	17.2	1.9	10.8	6.2	7.50	30.505	. .	. .
Aug. 26	15	ω Draconis	. .	3	IV–VI	350	5	2.2	56.8	13.1	58.9	6.7	56.9	2.43	32.277	−2.323	29.946
	16	ψ Draconis	. .	1	V	346	40	2.6	57.1	14.1	58.4	7.7	58.4	3.05	30.507	. .	28.184
	17	ψ Draconis	. .	2	V½, VI	"	"	"	"	"	"	"	"	"	29.569	. .	27.227
	18	Anon. $18^h\ 2^m\ 20^s$.	8.0	1	V	56	25	3.4	59.1	14.4	3.1	10.4	2.4	5.47	21.298	. .	21.975
	19	40 Draconis	. .	2	IV½, V½	338	55	1.8	55.4	14.7	57.9	7.4	56.2	2.23	31.599	. .	29.270
	20	41 Draconis	. .	1	V	"	"	"	"	"	"	"	"	"	31.998	. .	29.645
	21	Anon. $18^h\ 25^m\ 10^s$.	8.3	2	I, IX	95	40	6.0	4.3	18.7	4.7	12.7	3.0	8.23	29.703	. .	27.505
	22	Anon. $18^h\ 25^m\ 13^s$.	7.5	3	III–VII	"	"	"	"	"	"	"	"	"	25.206	. .	22.950
	23	42 Camelopardi, S. P. .	. .	3	IV–VI	306	40	1.1	54.8	10.8	56.1	5.5	55.8	0.68	31.000	. .	31.684
	24	Groom. 1228, S. P. .	. .	3	IV–VI	309	55	1.7	54.8	11.0	55.1	5.7	56.1	0.73	33.158	. .	30.844
	25	B. A. C. 2317, S. P. .	6.0	3	IV½–V½	320	25	7.9	1.5	20.0	3 9	13.3	2.8	8.23	39.636	. .	32.318
	26	B. A. C. 2377, S. P. .	6.0	3	IV½–V½	320	5	4.6	56.7	16.4	0.3	8.7	59 1	4.30	34.488	. .	32.170
	27	Piazzi 67, S. P. . .	. .	3	IV–VI	307	40	3.7	57.8	14.6	58.6	7.9	58.4	3 50	32.990	. .	30.675
	28	B. A. C. 6702 . .	6.0	3	IV½–V½	342	35	6.1	1.8	20.4	3.0	12.8	0.9	7.50	31.230	. .	28.904
	29	B. A. C. 2590, S. P. .	5.0	3	IV½–V½	318	45	3.7	58.4	15.2	0.0	7.9	58.5	3.95	33.560	. .	31.241
	30	B. A. C. 2677, S. P. .	. .	3	1–5	321	45	2.8	57.3	15.3	1.0	8.2	58.1	3.78	31.419	. .	32.097
	31	B. A. C. 2749, S. P. .	. .	3	IV–VI	311	45	0.8	55.8	12.8	57.4	5.2	56.1	1.35	34.984	. .	32.671
	32	Nadir	. .	.	. .	200	0	4.4	1.2	15.1	3.7	8.8	1.5	5.78	32.367	. .	. .
28	33	ω Draconis	. .	3	V–VII	350	5	5.2	58.9	16.6	0.9	11.2	1.1	5.65	30.481	−0.416	30.040
	34	ψ^1 Draconis	. .	3	IV½–V½	346	40	8.9	2.2	20.2	3.1	14.8	4.4	8.93	27.826	. .	27.408
	35	35 Draconis	. .	3	IV½–V½	341	55	4.2	58.2	16.7	0.6	12.1	0.7	5.42	29.535	. .	29.116
	36	Weisse (2) XVIII, 44	8.0	3	III–VII	22	30	6.2	1.9	15.2	2 0	12.4	2.7	6.73	32.227	. .	31.804
	37	δ Ursæ Minoris . .	. .	3	1–5	332	20	5.7	59.7	17.8	1.0	12.2	1.4	6.30	34.243	. .	33.825
	38	Anon. $18^h\ 22^m\ 32^s$.	8.0	3	V–IX	22	55	5.8	3.6	16.0	2.2	12.9	3.1	7.27	33.423	. .	32.990
	39	Lalande 34581 . .	7.0	3	III–VII	21	0	3.7	59.0	13.2	59.6	11.2	0.7	4.57	35.124	.	34.701
	40	B. A. C. 2210, S. P. .	4.5	3	IV½–V½	316	5	2.4	55.3	12.2	56.9	8.4	58.6	2.30	33.537	. .	33.124
	41	B. A. C. 2317, S. P. .	. .	3	IV½–V½	320	25	5.2	58.1	16.9	59.8	10.2	0.8	5.17	32.704	. .	32.292
	42	Lalande 36051 . .	6.8	3	III–VII	21	20	1.8	57.8	10.8	58.1	9.2	58.8	2.75	34.344	. .	33.921
	43	Piazzi 67, S. P. . .	. .	3	IV–VI	307	40	2.9	57.1	13.2	57.1	9.6	59.5	3.23	31.137	. .	30.729
	44	Anon. $19^h\ 26^m\ 3^s$.	. .	2	VII, IX	86	10	0.0	55.2	10.1	57.0	5.2	56.0	0.58	29.784	. .	29.382
	45	Lacaille 8216. . .	. .	3	III–VII	101	15	3.1	56.9	10.2	57.9	6.3	57.2	1.93	38.102	. .	37.695
	46	B. A. C. 2590, S. P. .	. .	3	IV½–V½	318	45	1.1	54.2	11.1	55.5	5.6	56.0	0.58	31.611	. .	31.199
	47	B. A. C. 2677, S. P. .	. .	3	1–5	321	45	2.8	57.9	14.9	0.3	9.5	59.2	4.10	32.559	. .	32.144
	48	B. A. C. 2749, S. P. .	5.5	3	IV–VI	311	45	2.3	57.3	12.9	57.8	8.4	58.0	2.78	33.147	. .	32.741
	49	B. A. C. 2824, S. P. .	. .	3	IV–VI	308	39	59.2	53.8	69.2	53.6	61.7	53.8	59.05	28.941	. .	28.533
	50	B. A. C. 7124 . .	. .	3	IV–VI	346	50	3.4	57.4	16.0	58.3	8 4	59 4	3.82	34.686	. .	34.261
	51	6 Ursæ Majoris, S. P. .	. .	3	IV–VI	304	0	2.6	56.6	13 1	59.0	9.1	57.0	2.90	25.981	. .	25.571
	52	Nadir	. .	.	. .	200	0	3.8	0.3	14 2	3 3	9.5	1.8	5.48	30.441	. .	. .
31	53	ω Draconis	. .	3	IV–VI	350	5	5.8	0.6	16.8	0.8	12.3	1.9	6.37	30.561	−0.463	30.090
	54	ψ^1 Draconis	. .	3	IV½–V½	346	40	1.8	54 1	13.8	54.1	8.1	58.7	1.77	27.648	. .	27.183
	55	35 Draconis	. .	3	IV½–V½	341	55	4.4	58.0	16.8	59.8	13.7	0.7	5.57	29.592	. .	29.126
	56	Dorpat 2288 . . .	8.2	3	III–VII	56	25	4.2	59.2	14.0	1.6	12.4	3.5	5.82	35.470	. .	35.007
	57	Lalande 33997 . .	8.0	3	III–VII	22	5	4.1	59.0	14.1	58.8	10.7	1.3	4.67	34.360	. .	33.890
	58	Anon. $18^h\ 25^m\ 3^s$.	. .	3	III–VII	95	40	5.6	1.4	16.2	1.4	12.8	2.4	6.63	27.713	. .	27.257
	59	B. A. C. 6376 . .	6.0	3	III–VII	78	34	59.8	56.1	70.1	54.8	67.2	57.1	60.85	28.029	. .	27.569
	60	Anon. $19^h\ 0^m\ 23^s$.	8.0	3	III–VII	80	50	4.0	1.2	14.1	0.0	10.5	0.8	5.10	29.924	. .	29.465
	61	Lalande 36238 . .	7.5	3	III–VII	22	40	4.9	59.7	14.6	58.3	11.2	2.1	5.13	28.856	. .	28.416
	62	τ Draconis	5.0	3	IV½–V½	345	44	59.4	53.0	70.8	52.0	65.2	55.0	59.23	26.890	. .	26.425
	63	Anon. $19^h\ 26^m\ 4^s$.	8.8	3	III–VII	86	10	3.4	0.9	14.9	1.8	11.0	1.7	5.62	29.797	. .	29.330
	64	Lacaille 8216. . .	7.5	3	III–VII	101	10	4.2	58.6	11.7	58.1	8.1	59.3	3.33	28.562	−0.463	28.108

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1874.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	30.090	79.8	74.8	− 1 37.2	S. 2 8 28.2	2.1	+ 36 45 8.5	− 2.0	Y.	
2	. .	. .	. .	. .		. .		. .	Y.	
3	30.230	81.0	76.5	+ 1 15.8	63 26 21.6	1 51.1	− 24 34 33.9	+ 12.5	Y.	
4	. .	. .	. .	− 3.8	70 10 2.2	2 33.4	− 31 18 56.9	− 13.4	Y.	
5	30.230	80.2	75.2	+ 35.7	74 5 38.8	3 13.1	− 35 15 13.1	+ 11.5	Y.	
6	. .	. .	. .	+ 1 35.3	1 36 41.1	1.6	+ 37 16 56.1	− 0.8	Y.	
7	. .	. .	. .	+ 1 50.7	0 36 53.2	0.6	+ 38 16 45.0	+ 0.8	Y.	
8	. .	. .	. .	+ 52.8	S. 38 50 55.7	45.1	+ 0 1 58.0	+ 4.0	Y.	
9	30.240	78.3	73.4	− 2 1.2	N. 71 41 55.5	2 47.6	+ 69 21 38.1	− 1.2	Y.	
10	. .	. .	73.0	+ 48.1	N. 62 59 8.0	1 49.5	+ 78 5 23.7	− 1.0	Y.	
11	. .	. .	. .	− 1 38.3	S. 1 33 23.1	1.5	+ 37 20 14.2	− 0.1	Y.	
12	. .	. .	. .	+ 1 13.1	S. 58 36 15.0	1 31.8	− 19 44 8.0	+ 4.3	Y	
13	30.234	77.3	71.4	+ 2 14.8	N. 36 22 42.3	41.4	+ 75 17 2.5	+ 0.6	Y.	+ 0″.86 applied to mean of A, B, E, and F.
14	. .	. .	. .	. .		. .		. .	Y.	
15	. .	. .	64.8	+ 0 1.7	29 54 55.9	32.8	+ 68 49 7.5	− 9.8	Y.	
16	. .	. .	. .	+ 56.9	33 19 0.0	37.5	+ 72 13 16.3	− 9.8	Y.	
17	30.230	70.0	64.2	+ 1 26.9	N. 33 18 30.0	37.5	+ 72 12 46.3	− 9.8	Y.	
18	. .	. .	. .	+ 4 11.5	S. 36 29 16.9	42.2	+ 2 23 39.7	+ 0.2	Y.	
19	. .	. .	. .	+ 22.9	N 41 4 34.9	49.8	+ 79 59 3.5	− 9.6	Y.	
20	. .	. .	. .	+ 11.1	N. 41 4 46.7	49.8	+ 79 59 15.3	− 9.6	Y.	
21	. .	. .	. .	+ 1 18.2	S. 75 41 26.4	3 40.8	− 36 51 28.4	+ 10.7	Y.	
22	30.234	69.0	61.5	+ 3 40.9	S. 75 43 49.2	3 41.4	− 36 53 51.8	+ 10.7	Y.	
23	. .	. .	61.2	− 52.8	N. 73 20 52.1	3 9.4	+ 67 42 19.7	+ 4.7	Y.	
24	30.230	68.3	60.8	− 26.4	70 5 25.7	2 37.1	+ 70 58 18.4	+ 5.4	Y.	
25	. .	. .	. .	− 1 12.7	59 36 4.4	1 37.6	+ 81 28 39.2	+ 7.2	Y.	
26	. .	. .	. .	− 1 8.0	59 56 3.7	1 39.0	+ 81 8 38.5	+ 7.1	Y.	
27	30.220	68.0	59.7	− 21.1	72 20 17.6	2 58.6	+ 68 43 5.0	+ 4.8	Y.	
28	. .	. .	. .	+ 34.3	37 24 18.2	44.0	+ 76 18 41.0	− 9.7	Y.	
29	. .	. .	59.0	− 38.9	61 15 34.9	1 44.6	+ 79 49 1.7	+ 6.6	Y.	
30	. .	. .	. .	− 1 5.7	58 16 1.9	1 32.8	+ 82 48 46.5	+ 6.9	Y.	
31	30.208	66.5	59.3	− 1 23.7	68 16 22.4	2 23.4	+ 72 47 35.4	+ 5.2	Y.	
32	. .	. .	. .	. .		. .		. .	Y.	
33	. .	. .	. .	− 1.2	29 54 55.6	32.5	+ 68 49 6.9	− 10.0	Y.	
34	30.088	70.0	66.0	+ 1 21.3	33 18 29.8	37.2	+ 72 12 45.8	− 10.1	Y.	
35	. .	. .	. .	+ 27.7	N. 38 4 26.9	44.3	+ 76 58 50.0	− 10.0	Y.	
36	. .	. .	. .	− 56.5	S. 2 29 10.2	2.5	+ 36 24 26.1	− 7.9	Y.	
37	30.096	69.5	65.4	− 1 59.9	N. 47 41 53.6	1 2 2	+ 86 36 34.6	− 9.3	Y.	
38	. .	. .	. .	− 1 33.7	S. 2 53 33.6	3.5	+ 36 0 1.7	− 8.3	Y.	
39	. .	. .	. .	− 2 27.3	S. 0 57 37.3	0.9	+ 37 56 0.6	− 8.7	Y.	
40	30.110	69.0	65.0	− 1 37.9	N. 63 56 35.6	1 55.4	+ 77 7 50.2	+ 6.9	Y.	
41	. .	. .	. .	− 1 11.8	N. 59 36 6.7	1 36.4	+ 81 28 38.1	+ 7.6	Y.	
42	. .	. .	. .	− 2 2.9	S. 1 17 59.9	1.3	+ 37 35 37.6	− 9.4	Y.	
43	30.108	68.8	64.1	− 22.9	N. 72 20 19.6	2 56.4	+ 68 43 5.2	+ 5.3	Y	
44	. .	. .	. .	+ 19.4	S. 66 10 20.0	2 8.0	− 27 18 49.2	+ 3.2	Y	
45	. .	. .	. .	− 4 1.1	S. 81 11 0.8	5 50.5	− 42 23 12.5	+ 5.8	Y	
46	30.102	68.2	63.0	− 37.6	N. 61 15 37.0	1 43.4	+ 79 49 0.8	+ 7.2	Y	
47	. .	. .	. .	− 1 7.2	58 16 3.1	1 32.0	+ 82 48 46.1	+ 7.5	Y.	
48	. .	. .	. .	− 1 25.9	68 16 23.1	2 22.1	+ 72 47 36.0	+ 5.8	Y.	
49	30.108	67.5	61.2	+ 46.0	71 19 15.0	2 47.3	+ 69 44 18.9	+ 5.1	Y.	
50	. .	. .	. .	− 2 13.6	33 12 9.7	37.4	+ 72 6 25.9	− 9.9	Y.	
51	30.104	66.5	59.7	+ 2 18.8	75 57 38.3	3 45.0	+ 65 4 57.9	+ 4.0	Y.	
52	. .	. .	. .	. .		. .		. .	Y.	
53	30.074	70.8	69.2	− 2.8	29 54 56.4	32.3	+ 68 49 7.5	− 10.2	Y	
54	. .	. .	. .	+ 1 28.3	33 18 30.0	36.9	+ 72 12 45.7	− 10.3	Y.	
55	30.072	70.8	68.0	+ 27.4	N. 38 4 27.1	44.1	+ 76 58 50.0	− 10.2	Y.	
56	. .	. .	. .	− 2 36.9	S. 36 22 28.9	41.5	+ 2 30 28.4	− 0.1	Y.	
57	. .	. .	. .	− 2 1.9	2 3 2.8	2.0	+ 36 50 31.0	− 8.6	Y.	
58	30.084	70.5	66.0	+ 1 26.0	75 41 32.6	3 37.8	− 36 51 31.6	+ 11.0	Y.	
59	. .	. .	. .	+ 1 16.2	58 36 17.1	1 32.4	− 19 44 10.7	+ 4.8	Y.	
60	30.100	70.2	65.0	+ 16.7	60 50 21.8	1 41.2	− 21 58 24.2	+ 3.9	Y.	
61	. .	. .	. .	+ 49.7	S. 2 40 54.8	2.7	+ 36 12 41.3	− 9.7	Y.	
62	. .	. .	. .	+ 1 52.1	N. 34 13 8.7	38.6	+ 73 7 26.1	− 11.1	Y.	
63	30.096	70.0	64.2	+ 20.7	S. 66 10 26.3	2 7.8	− 27 18 55.3	+ 3.4	Y.	
64	. .	. .	64.2	+ 59.3	S. 81 11 2.6	5 49.4	− 42 23 13.2	+ 6.1	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No of mic. readings.	Transit Wires.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1874.															
Aug. 31	1	λ Ursæ Minoris . .	. .	3	2–4	330 0 3.9	56.8	15.2	57.8	9.7	58.8	3.70	32.632	−0.463	32.167
	2	B. A. C. 2677, S. P. .	. .	3	1–5	321 45 2.3	56.0	14.5	58.0	9.2	58.2	3.03	32.613	. .	32.151
	3	B. A. C. 2749, S. P. .	. .	3	IV½–V½	311 44 59.5	52.5	70.0	51.5	65.1	55.2	58.97	33.116	. .	32.656
	4	B. A. C. 2824, S. P. .	. .	3	IV–VI	308 40 5 3	58.0	16.4	57.3	11.2	0.3	4.75	29.219	. .	28.764
	5	Anon. 20h 29m 39s .	7.5	3	III–VII	21 29 59.6	55.2	68.8	55.9	66.8	57.6	60.65	33 780	. .	33.310
	6	Weisse XX, 942. .	8.0	3	III–VII	69 50 4.1	0.2	14.9	1.3	11.5	1.2	5.53	32.457	. .	31.996
	7	Anon. 20h 47m 17s .	7.5	3	III–VII	20 55 2.5	57.9	12.2	59.5	9.2	59.3	3.87	27.655	. .	27.185
	8	Gr. 12-Yr. Cat. 1879.	5.0	3	IV½–V½	338 50 3.8	58.4	17.7	1.0	10.8	0.2	5.32	31.354	. .	30.887
	9	Nadir	. .	.	. .	200 0 3.5	58.8	14.0	1.8	9.0	2.2	4.88	30.469	. .	. .
Sept. 5	10	Lalande 36238 . .	7.5	3	III–VII	22 40 5.5	59.4	14.0	57.4	11.3	2.0	4.93	28.901	−0.577	28.317
	11	Lalande 36729 . .	7.5	3	III–VII	19 55 5.1	58.0	14.1	58.8	12.1	2.0	5.02	29.935	. .	29.350
	12	Anon. 19h 29m 38s .	9.0	1	V	39 20 6.1	58.6	14.8	59.2	11.9	4.3	5.82	32.585	. .	32.008
	13	19 Cygni	. .	3	III–VII	20 30 4.7	56.6	13.0	56.9	10.6	0.4	3.70	31.677	. .	31.092
	14	25 Cygni	6.0	3	III–VII	22 10 5.5	58.7	14.2	58.9	11.7	2.1	5.18	27.869	. .	27.285
	15	Lalande 38592 . .	7.2	3	III–VII	24 50 6.2	1.1	15 6	0.1	12.2	2.9	6.35	31.025	. .	30.442
	16	Anon. 20h 14m 14s .	7.5	3	III–VII	21 0 1.3	54.8	9.8	53.9	8.2	58.7	1.12	30.134	. .	29.550
	17	Anon. 20h 29m 40s .	7.5	3	III–VII	21 30 4.8	57.9	13.4	58.0	11.6	2.2	4.65	34.086	. .	33.502
	18	Weisse XX, 942. .	8.0	3	III–VII	69 50 4.7	58.9	15.0	58.1	11.1	2.4	5.03	32.455	. .	31.880
	19	Anon. 20h 47m 15s .	7.5	3	III–VII	20 54 58.9	52.9	67.9	52.2	64.9	55.9	58.78	27.632	. .	27.048
	20	Anon. 20h 55m 59s .	7.5	3	III–VII	21 45 4.8	58.0	13.0	57.5	11.0	1.7	4.33	33.054	. .	32.470
	21	Lalande 41269 . .	6.6	3	III–VII	29 30 1.7	54.0	10.7	54.2	7.4	57.9	0.98	29.792	. .	29.210
	22	34 Vulpeculæ . . .	6.0	3	III–VII	35 34 61.2	52.9	68.8	53.3	65.4	57.0	59.77	33.225	. .	32.644
	23	Anon. 21h 29m 54s .	7.2	3	III–VII	20 0 4.9	57.3	13.6	58.2	10.4	0.2	4.10	28.944	. .	28.359
	24	Nadir	. .	.	. .	200 0 2.5	54.3	11.2	55.8	6.5	0.9	1.87	30.486	. .	. .
7	25	11 Cygni	6.0	3	III–VII	22 15 6.9	59.8	15.7	0.1	13.8	4.8	6.85	33.724	−0.477	33.240
	26	Lalande 38039 . .	7.0	3	III–VII	22 15 5.8	0.3	14.8	59.2	12.8	4.1	6 17	33.534	. .	33.050
	27	Anon. 19h 57m 19s .	7.8	3	III–VII	23 55 2.3	54.2	9.1	54.2	6.8	58.7	0.88	31.690	. .	31.206
	28	3 Capricorni . . .	. .	3	V–IX	71 35 1.4	53.8	8.8	54.4	4.7	58.1	0.20	29.227	. .	28.753
	29	Weisse (2) XX, 643.	7.5	3	IV–VI	20 5 4.6	57.7	13.2	57.9	11.3	1.2	4.32	30.670	. .	30.185
	30	Lalande 39884 . .	. .	3	III–VII	21 15 3.0	56.0	10.8	56.3	9.6	59.7	2.57	32.784	. .	32.300
	31	Lacaille 40277 . .	7.0	3	III–VII	23 45 6.3	1.2	14.8	0.3	12.2	4.0	6.47	25.977	. .	25.493
	32	B. A. C. 7269 . .	6.0	3	III–VII	55 10 2.5	53.8	10.1	55.9	7.6	0.0	1.65	30.278	. .	29.800
	33	Anon. 21h 3m 59s. .	8.0	3	III–VII	71 10 3.2	55.8	9.7	56.9	7.0	0.4	2.17	36.758	. .	36.283
	34	19 Aquarii	6.0	3	III–VII	69 10 4.0	57.9	12.8	59.5	8.8	2.0	4.17	31.781	. .	31.306
	35	Anon. 21h 24m 55s .	8.0	3	V–IX	84 40 4.7	59.2	14.1	0.7	9.7	2.2	5.10	33.781	. .	33.312
	36	Lalande 42269 . .	7.0	3	III–VII	19 55 2.2	53.5	10.7	56.0	7.2	58.2	1.30	27.308	. .	26.823
	37	Anon. 21h 44m 4s. .	7.0	3	III–VII	21 10 2.7	56.2	11.2	56.8	9.0	59.8	2.62	35.062	. .	34.578
	38	Lalande 42878 . .	6.5	3	III–VII	20 35 2.9	55.6	11.1	55.8	8.4	57.9	1.95	32.925	. .	32.440
	39	23 Pegasi	5.5	3	III–VII	30 30 0.8	53.2	8.5	54.8	6.2	58.0	0.25	26.582	. .	26.100
	40	Nadir	. .	.	. .	200 0 2.1	53.0	10.2	56.4	4.7	0.2	1.10	30.362	. .	. .
9	41	Lalande 33692 . .	. .	3	III–VII	21 30 4.9	56.8	11.2	58.2	10.3	1.4	3.80	28.616	−0.556	28.053
	42	Lacaille 7846 . .	6.5	2	VII, IX	99 25 2.1	56.8	10.1	56.9	5.4	58.0	1.55	37.751	. .	37.220
	43	Lalande 36002 . .	7.8	3	III–VII	20 35 2.1	54.8	10.8	55.5	7.2	57.9	1.38	30.708	. .	30.144
	44	Lalande 36402 . .	7.5	3	III–VII	20 5 2.0	56.1	12.1	57.4	7.8	57.8	2.20	30.091	. .	29.527
	45	O. Arg. S. 19623. .	9.0	3	III–VII	78 35 3.9	59.2	14.8	0.9	10.3	1.4	5.08	26.996	. .	26.443
	46	O. Arg. S. 19837. .	9.0	3	III–VII	84 0 2.3	55.4	10.7	57.6	6.2	57.9	1.68	33.896	. .	33.345
	47	O. Arg. S. 1150 . .	8.0	3	III–VII	73 25 2.1	56.7	9.8	58.6	5.8	57.3	1.72	35.917	. .	35.363
	48	Anon. 19h 55m 6s . .	8.5	2	III, VII	23 55 1.2	56.0	10.2	57.0	5.8	57.0	1.20	29.824	. .	29.257
	49	Anon. 19h 55m 13s .	8.0	1	V	" " "	"	"	"	"	"	"	28.231	. .	27.675
	50	Lacaille 8373 . .	6.5	3	III–VII	93 20 2.2	57.8	10.6	59.1	6.2	58.1	2.33	30.179	. .	29.630
	51	Anon. 20h 15m 35s .	8.3	3	III–VII	84 15 0.0	54.5	8.9	55.8	4.8	56.8	0.13	30.609	. .	30.088
	52	O. Arg. S. 20574. .	9.0	3	III–VII	81 50 6.2	0.9	15.1	1.8	9.5	1.3	5.80	30.515	. .	29.963
	53	Anon 20h 32m 37s .	8.5	3	III–VII	21 5 5.0	59.6	14.0	0.8	11.1	1.1	5.27	34.260	. .	33.607
	54	B. A. C. 7210 . .	7.2	3	III–VII	86 40 1.8	56.5	11.0	59.2	6.2	58.0	2.12	28.032	. .	27.481
	55	Anon. 20h 50m 30s .	7.3	3	III–VII	58 50 4.8	59.8	13.9	1.2	10.8	3.0	5.58	28.002	. .	27.446
	56	Anon. 21h 4m 0s . .	8.0	3	III–VII	71 10 3.1	57.9	11.8	59.2	7.2	59.7	3.15	36.891	. .	36.337
	57	Lalande 41419 . .	6.2	3	III–VII	20 14 60.0	54.2	69.4	54.8	65.2	56.0	59.93	35.691	. .	35.127
	58	Anon. 21h 19m 9s .	7.2	2	VIII, IX	20 50 4.5	59.2	13.3	0.1	9.2	0.4	4.45	35.462	. .	34.929
	59	Anon. 21h 29m 17s .	8.5	3	III–VII	" " "	"	"	"	"	"	"	33.185	. .	32.621
	60	Lalande 42269 . .	7.0	3	III–VII	19 55 6.1	1.2	15.2	2.8	11.8	1.1	6.37	27.540	. .	26.976
	61	Nadir	. .	.	. .	200 0 3.8	58.2	13.2	0.0	7.2	1.2	3.93	30.531	. .	. .
12	62	Lacaille 7858. . .	. .	3	III–VII	96 0 5.4	57.3	10.2	56.2	8.2	2.2	3.25	32.346	−0.477	31.876
	63	Lalande 35802 . .	. .	3	III–VII	20 20 2.9	53.2	8.9	53.3	9.2	58.6	1.02	30.012	. .	29.527
	64	Lalande 36513 . .	6.5	3	III–VII	21 44 61.7	52.2	66.8	52.7	66.8	59.2	59.90	26.289	. .	25.805
	65	17 Cygni	6.5	3	III–VII	22 15 4.2	57.0	11.7	55.3	9.8	2.9	3.48	33.578	. .	33.094
	66	Weisse XIX, 1150 .	8.0	3	III–VII	73 25 3.9	55.2	10.3	56.8	8.5	1.8	2.75	35.726	−0.477	35.251

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1874.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	′ ″		
1	30.090	69.2	63.8	− 1 7.9	N. 50 1 4.2	1 7.7	+ 88 55 50.7	− 9.5	Y.	
2	. .	. .	. .	− 1 7.4	58 16 4.4	1 31.7	+ 82 48 45.1	+ 8.3	Y.	
3	. .	. .	. .	− 1 23.2	68 16 24.3	2 21.7	+ 72 47 35.2	+ 6.5	Y.	
4	. .	. .	. .	+ 38.7	N. 71 19 16.5	2 46.6	+ 69 44 18.1	+ 5.9	Y.	
5	. .	. .	. .	− 1 43.7	S. 1 28 16.9	1.5	+ 37 25 20.4	− 11.3	Y.	
6	30.100	68.8	62.8	− 1 2.6	49 49 3.0	1 7.3	− 10 56 31.5	− 6.0	Y.	
7	. .	. .	. .	+ 1 28.2	S. 0 56 32.1	0.9	+ 37 57 5.8	− 11.6	Y.	
8	30.100	68.5	62.3	− 27.8	N. 41 10 22.5	49.8	+ 80 4 51.1	− 9.8	Y.	
9	. .	. .	. .	. .		. .		. .	Y.	
10	30.230	76.0	73.3	+ 52.8	S. 2 40 57.7	2.6	+ 36 12 38.5	− 10.4	Y.	
11	. .	. .	. .	+ 20.4	N. 0 4 34.6	0.1	+ 38 58 13.5	− 11.0	Y.	
12	. .	. .	. .	− 1 3.0	S. 19 19 2.9	19.7	+ 19 34 16.2	− 8.3	Y.	
13	30.235	75.8	72.7	− 34.2	0 29 29.5	0.5	+ 38 24 8.8	− 11.5	Y.	
14	. .	. .	. .	+ 1 25.1	2 11 30.3	2.1	+ 36 42 6.4	− 11.6	Y.	
15	. .	. .	. .	− 13.8	4 49 52.5	4.7	+ 34 3 41.6	− 11.5	Y.	
16	. .	. .	. .	+ 14.1	1 0 15.2	1.0	+ 37 53 22.6	− 12.1	Y.	
17	. .	. .	. .	− 1 49.8	1 28 14.9	1.4	+ 37 25 22.5	− 12.3	Y.	
18	30.228	75.2	71.5	− 58.9	49 49 6.1	1 6.5	− 10 56 33.8	− 5.8	Y.	
19	. .	. .	. .	+ 1 32.5	0 56 31.3	0.9	+ 37 57 6.6	− 12.7	Y.	
20	. .	. .	. .	− 1 17.4	1 43 46.9	1.7	+ 37 9 51.2	− 12.8	Y.	
21	. .	. .	. .	+ 24.7	9 30 25.7	9.4	+ 29 23 3.7	− 12.7	Y.	
22	. .	. .	. .	− 1 22.9	15 33 36.9	15.7	+ 23 19 46.2	− 12.4	Y.	
23	30.230	75.0	70.2	+ 51.4	0 0 55.5	0.0	+ 38 52 43.3	− 11.8	Y.	
24	. .	. .	. .	. .		. .		. .	Y.	
25	30.100	77.0	72.6	− 1 41.6	2 13 25.3	2.2	+ 36 40 11.3	− 11.4	Y.	
26	. .	. .	. .	− 1 35.6	2 13 30.6	2.2	+ 36 40 6.0	− 11.7	Y.	
27	. .	. .	. .	− 37.8	3 54 23.1	3.8	+ 34 59 11.9	− 11.7	Y.	
28	30.106	76.3	71.4	+ 39.1	51 35 39.3	1 10.5	− 12 43 11.0	− 3.4	Y.	
29	. .	. .	. .	− 5.8	0 4 58.5	0.1	+ 38 48 40.2	− 12.6	Y.	
30	. .	. .	. .	− 1 12.1	1 13 50.5	1.2	+ 37 39 47.1	− 12.8	Y.	
31	. .	. .	. .	+ 2 21.2	3 47 27.7	3.7	+ 35 6 7.4	− 12.8	Y.	
32	30.110	76.0	71.5	+ 6.3	35 10 7.9	39.4	+ 3 42 51.5	− 9.3	Y.	
33	. .	. .	. .	− 3 16.9	51 6 45.3	1 9.3	− 12 14 15.8	− 7.3	Y.	
34	. .	. .	. .	− 40.9	49 9 23.2	1 4.7	− 10 16 49.1	− 8.7	Y.	
35	. .	. .	. .	− 1 43.8	S. 64 38 21.3	1 54.9	− 25 46 37.4	− 6.8	Y.	
36	. .	. .	. .	+ 1 39.6	N. 0 3 19.1	0.1	+ 38 56 58.0	− 13.7	Y.	
37	. .	. .	. .	− 2 23.5	S. 1 7 39.2	1.1	+ 37 45 58.5	− 13.8	Y.	
38	. .	. .	. .	− 1 16.5	0 33 45.4	0.5	+ 38 19 52.9	− 13.9	Y.	
39	30.104	75.7	71.0	+ 2 2.2	10 32 2.5	10.4	+ 28 21 25.9	− 14.0	Y.	
40	. .	. .	. .	. .		. .		. .	Y.	
41	30.130	76.5	71.8	+ 1 1.0	1 31 4.8	1.5	+ 37 22 32.5	− 9.3	Y.	
42	30.128	75.5	70.0	− 3 46.3	79 21 15.3	4 49.3	− 40 32 25.8	+ 11.7	Y.	
43	. .	. .	. .	− 4.5	0 34 56.9	0.6	+ 38 18 41.3	− 11.2	Y.	
44	. .	. .	. .	+ 14.8	0 5 17.0	0.1	+ 38 48 21.7	− 11.5	Y.	
45	30.128	74.0	68.8	+ 1 51.5	58 36 56.6	1 32.0	− 19 44 49.8	+ 1.9	Y.	
46	. .	. .	. .	− 1 44.8	63 58 16.8	1 54.7	− 25 6 32.7	+ 2.8	Y.	
47	. .	. .	. .	− 2 48.1	53 22 13.7	1 15.6	− 14 29 50.5	− 1.3	Y.	
48	. .	. .	. .	+ 23.3	3 55 24.5	3.9	+ 34 58 10.4	− 12.2	Y.	
49	. .	. .	. .	+ 1 12.9	3 56 14.1	3.9	+ 34 57 20.8	− 12.2	Y.	
50	30.140	73.3	69.0	+ 11.6	73 20 13.9	3 5.7	− 34 29 40.8	+ 2.6	Y.	
51	. .	. .	. .	− 1.8	64 14 58.3	1 56.2	− 25 23 15.7	− 0.7	Y.	
52	. .	. .	. .	+ 1.2	61 50 7.0	1 44.9	− 22 58 13.1	− 2.1	Y.	
53	. .	. .	. .	− 1 55.9	1 3 9.4	1.0	+ 37 50 28.4	− 13.3	Y.	
54	. .	. .	. .	+ 1 19.0	66 41 21.1	2 10.2	− 27 49 52.5	− 2.5	Y.	
55	30.154	73.0	67.5	+ 1 20.1	38 51 25.6	45.5	+ 0 1 27.7	− 9.0	Y.	
56	. .	. .	. .	− 3 18.6	51 6 44.6	1 10.0	− 12 14 15.8	− 7.6	Y.	
57	. .	. .	. .	− 2 40.7	0 12 19.2	0.2	+ 38 41 19.4	− 14.1	Y.	
58	. .	. .	. .	− 2 34.5	0 47 30.0	0.8	+ 38 6 8.0	− 14.1	Y.	
59	. .	. .	. .	− 1 22.2	S. 0 48 42.3	0.8	+ 38 4 55.7	− 14.3	Y.	
60	30.146	72.8	66.4	+ 1 34.8	N. 0 3 18.8	0.1	+ 38 56 57.7	− 14.3	Y.	
61	. .	. .	. .	. .		. .		. .	Y.	
62	. .	. .	. .	− 58.8	S. 75 59 4.5	3 36.7	− 37 9 2.4	+ 10.7	Y.	
63	30.090	79.5	79.4	+ 14.8	0 20 15.8	0.3	+ 38 33 22.7	− 11.5	Y.	
64	. .	. .	. .	+ 2 11.5	1 47 11.4	1.7	+ 37 6 25.7	− 11.8	Y.	
65	30.105	79.5	78.2	− 1 37.0	2 13 26.5	2.1	− 36 40 10.2	− 12.2	Y.	
66	. .	. .	. .	− 2 44.6	S. 53 22 18.2	1 14.2	− 14 29 53.6	− 1.3	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1874. Sept. 12	1	Anon. $19^h\ 57^m\ 17^s$.	7.0	3	III–VII	23 55 5.3	55.3	11.1	55.8	9.8	2.2	3.25	31.699	−0.477	31.215
	2	O. Arg. S. 20320. .	8.0	3	III–VII	76 10 7.8	58.7	14.1	58.5	12.2	4.1	5.90	35.244	. .	34.770
	3	Weisse (2) XX, 643 .	7.0	3	III–VII	20 4 60.0	51.7	66.9	49.2	65.2	56.2	58.20	30.440	. .	29.955
	4	Weisse (2) XX, 729. .		3	III–VII	72 5 2.8	52.9	6.9	51.9	5.8	59.8	0.02	34.897	. .	34.422
	5	B. A. C. XX, 7172 .	7.0	3	III–VII	63 14 61.9	53.7	66.1	51.0	65.2	59.5	59.57	30.940	. .	30.464
	6	B. A. C. XX, 7269 .	. .	3	III–VII	55 10 2.9	54.1	10.1	55.2	8.7	1.2	2.03	30.223	. .	29.745
	7	Anon. $21^h\ 5^m\ 32^s$.	. .	2	VII, IX	71 20 2.7	53.8	8.2	53.9	6.2	0.4	0.87	34.228	. .	33.756
	8	Weisse (2) XXI, 322	7.0	3	III–VII	20 35 8.3	59.9	16.2	59.5	14.8	5.3	7.33	27.106	. .	26.621
	9	Lalande 41789 . .	7.0	3	III–VII	24 0 6.2	59.5	14.8	59.8	12.7	5.0	6.33	27.483	. .	26.999
	10	B. A. C. 7614 . .	6.0	3	III–VII	19 55 6.2	58.3	12.8	58.0	11.2	1.7	4.70	27.681	. .	27.196
	11	Lacaille 9003. . .	7.0	3	III–VII	86 50 4.4	56.3	11.6	57.1	8.7	2.4	3.42	31.142	. .	30.670
	12	Nadir	. .	.	. .	200 0 2.7	53.6	9.7	55.0	5.8	1.1	1.32	30.368	. .	. .
19	13	42 Camelopardi, S. P. .	. .	3	IV–VI	306 40 4.8	55.2	11.7	55.0	9.4	0.2	2.72	32.379	−0.363	32.023
	14	Weisse XIX, 187 .	8.0	3	V–IX	67 45 3.1	54.8	10.7	55.8	8.2	1.1	2.28	26.319	. .	25.961
	15	Lalande 36729 . .	7.5	3	III–VII	19 55 6.4	58.4	14.6	59.4	13.2	3.1	5.85	29.866	. .	29.495
	16	σ Draconis	. .	3	IV–VI	349 25 2.6	54.4	11.6	56.0	8.4	58.5	1.92	26.316	. .	25.945
	17	Lalande 38037 . .	7.5	3	IV–VI	24 19 60.1	53.1	68.5	52.3	67.1	56.4	59.58	31.940	. .	31.570
	18	Anon. $20^h\ 0^m\ 35^s$.	6.5	3	III–VII	20 45 2.8	55.0	9.4	55.1	9.5	58.1	1.65	27.772	. .	27.401
	19	Weisse XX, 145. .	6.5	3	III–VII	72 40 5.7	59.8	13.2	59.8	12.2	3.0	5.62	34.047	. .	33.686
	20	Anon. $20^h\ 18^m\ 20^s$.	9.0	3	III–VII	20 5 4.3	57.6	12.5	57.4	11.2	1.0	4.00	30.319	. .	29.948
	21	B. A. C. 7124 . .	. .	3	IV–VI	346 45 7.8	0.1	18.5	59.8	14.2	5.0	7.57	25.449	. .	25.077
	22	B. A. C. 7210 . .	6.5	3	III–VII	86 40 2.5	55.3	10.3	57.0	7.6	59.4	2.02	27.835	. .	27.477
	23	Anon. $20^h\ 50^m\ 30^s$.	7.5	3	III–VII	58 55 6.2	58.5	12.4	58.9	11.2	4.1	5.22	37.366	. .	37.003
	24	Lalande 41269 . .	6.0	3	III–VII	29 30 3.9	56.6	12.3	58.0	11.4	2.1	4.05	29.856	. .	29.488
	25	Nadir	. .	.	. .	200 0 1.5	53.8	8.2	54.4	6.4	59.8	0.68	30.237	. .	. .
22	26	Lamont 6597 . . .	9.0	3	III–VII	59 45 0.4	55.8	9.2	56.9	6.3	59.1	1.28	31.907	−0.503	31.404
	27	Lalande 36513 . .	6.5	3	III–VII	21 45 6.8	1.0	16.5	2.7	14.2	4.2	7.57	26.667	. .	26.157
	28	Anon. $19^h\ 28^m\ 55^s$.	8.5	2	I, IX	100 35 2.2	56.8	10.5	59.2	6.7	58.1	2.25	29.459	. .	29.000
	29	O. Arg. S. 20059 .	8.3	3	III–VII	86 20 2.6	57.2	12.5	59.2	7.5	59.6	3.10	35.025	. .	34.527
	30	Anon. $19^h\ 55^m\ 6^s$.	8.5	2	I, IX	23 55 6.5	59.7	16.7	2.8	11.8	2.6	6.68	29.953	. .	29.416
	31	Anon. $19^h\ 55^m\ 13^s$.	7.5	3	III–VII	" " "	"	"	"	"	"	"	28.370	. .	27.860
	32	Anon. $20^h\ 15^m\ 42^s$.	9.0	3	III–VII	72 30 8.0	3.8	17.7	5.0	14.7	3.9	8.85	30.300	. .	29.799
	33	Weisse XX, 359. .	9.0	1	IX	" " "	"	"	"	"	"	"	31.894	. .	31.400
	34	Weisse XX, 729. .	. .	1	V	72 5 5.0	0.8	15.2	2.1	11.7	2.7	6.25	34.918	. .	34.415
	35	B. A. C. 7210 . .	7.2	3	III–VII	86 40 3.8	59.4	13.6	1.8	9.2	59.9	4.62	28.045	. .	27.547
	36	Anon. $20^h\ 55^m\ 57^s$.	7.5	3	III–VII	21 45 3.0	58.9	13.1	1.0	10.6	1.1	4.62	33.121	. .	32.611
	37	O. Arg. S. 21189 .	9.0	1	V	82 30 4.2	0.4	4.0	2.2	10.2	0.8	3.63	32.222	. .	31.719
	38	Anon. $21^h\ 15^m\ 6^s$.	8.5	3	III, VII	82 5 6.1	1.2	15.2	3.0	11.6	1.6	6.45	28.946	. .	28.447
	39	Lalande 41789 . .	7.0	3	V–IX	24 0 3.8	59.2	13.8	0.2	9.7	0.2	4.48	27.567	. .	27.047
	40	Moon S.	. .	3	III–VII	79 0 3.8	0.3	14.8	1.9	10.3	59.8	5.15	35.986	. .	35.487
	41	Lacaille 9003. . .	. .	3	III–VII	86 50 5.6	3.1	16.8	4.9	13.4	3.5	7.88	31.416	. .	30.918
	42	Anon. $22^h\ 3^m\ 44^s$.	8.5	3	III–VII	22 5 1.3	57.1	11.8	58.0	7.7	58.2	2.35	29.506	. .	28.996
	43	O. Arg. S. 22049 .	. .	3	III–VII	80 0 1.6	0.2	12.1	1.2	9.2	59.1	3.90	35.025	. .	34.526
	44	Anon. $22^h\ 18^m\ 23^s$.	. .	3	III–VII	20 20 0.2	57.3	10.4	59.2	7.7	56.8	1.93	33.746	. .	33.235
	45	39 Pegasi	5.5	3	III–VII	39 20 2.1	57.4	9.8	0.4	7.5	0.2	2.90	34.131	. .	33.625
	46	Nadir	. .	.	. .	200 0 5.2	0.8	13.9	4.2	9.4	3.3	6.13	30.549	. .	. .
23	47	Anon. $19^h\ 2^m\ 15^s$.	8.0	3	III–VII	68 55 0 8	55.8	9.8	57.4	7.4	59.8	1.83	29.959	−0.497	29.464
	48	Anon. $19^h\ 17^m\ 28^s$.	8.5	3	III–VII	93 25 7.1	3.6	15.7	3.7	13.2	5.4	8.12	35.880	. .	35.390
	49	Anon. $19^h\ 28^m\ 55^s$.	8.0	2	I, IX	100 34 59.3	52.2	65.7	52.5	63.4	54.8	57.98	35.280	. .	34.827
	50	O. Arg. S. 20058 .	. .	3	III–VII	86 20 2.4	56.7	10.6	59.5	7.4	0.0	2.77	34.968	. .	34.476
	51	Lalande 38037 . .	. .	2	VII, IX	24 19 58.4	51.8	66.0	52.1	63.7	54.0	57.67	31.934	. .	31.413
	52	b^1 Cygni	5.5	3	III–VII	23 15 2.4	55.4	10.1	56.3	9.3	59.8	2.23	29.093	. .	28.589
	53	Weisse (2) XX, 304 .	7.5	3	III–VII	20 29 56.0	49.2	63.9	49.6	62.1	50.9	55.28	29.933	. .	29.428
	54	Anon. $20^h\ 26^m\ 24^s$.	9.0	3	III–VII	80 29 60.0	54.4	67.8	54.3	65.2	55.9	59.60	25.046	. .	24.553
	55	B. A. C. 7172 . .	7.0	3	III–VII	63 15 0.9	56.0	8.5	55.6	5.3	58.2	0.75	31.052	. .	30.550
	56	Lalande 40400 . .	6.5	3	III–VII	19 50 7.6	2.2	17.1	3.0	14.1	3.2	7.87	27.444	. .	26.939
	57	O. Arg. S. 21912 .	. .	3	III–VII	77 20 6.0	2.4	15.3	3.7	13.7	3.9	7.50	33.032	. .	32.538
	58	O. Arg. S. 22051 .	8.2	3	III–VII	80 0 3.1	59.7	13.1	1.1	9.8	1.0	4.63	32.209	. .	31.716
	59	Lalande 43751 . .	6.0	3	III–VII	21 0 3.4	59.1	13.2	1.2	11.3	1.8	5.00	35.663	. .	35.159
	60	Anon. $22^h\ 27^m\ 45^s$.	7.5	3	III–VII	21 25 2.1	57.9	10.9	58.0	9.8	0.0	3.12	31.425	. .	30.921
	61	Moon S.	. .	3	III–VII	73 0 4.2	0.0	13.9	2.0	10.0	1.0	5.18	35.369	. .	34.874
	62	Nadir	. .	.	. .	200 0 1.3	55.2	9.1	57.8	6.2	59.9	1.58	30.397	. .	. .
24	63	Lalande 35866 . .	7.5	3	III–VII	21 40 5.9	0.3	14.2	59.2	15.3	2.2	6.18	27.360	−0.550	26.803
	64	Anon. $19^h\ 17^m\ 18^s$.	8.5	3	III–VII	93 25 1.2	55.3	8.8	54.8	7.4	56.7	0.70	35.757	. .	35.214
	65	Lacaille 8158. . .	8.0	3	III–VII	100 35 6.8	59.8	13.6	59.2	10.8	2.1	5.38	35.625	−0.550	35.084

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1874.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	— 38.1	S. 3 54 25.2	3.8	+ 34 59 9.8	— 12.8	Y.	
2	30.112	79.3	77.5	— 2 29.5	56 7 36.4	1 22.3	— 17 15 19.9	— 2.0	Y.	
3	. .	. .	. .	+ 1.4	0 4 59.6	0.1	+ 38 48 39.1	— 13.8	Y.	
4	. .	. .	. .	— 2 18.6	52 2 41.4	1 10.9	— 13 10 13.5	— 4.9	Y.	
5	30.110	79.2	76.6	— 14.5	43 14 45.0	52.1	— 4 21 58.3	— 7.3	Y.	
6	. .	. .	. .	+ 8.0	35 10 10.0	39.1	+ 3 42 49.7	— 10.0	Y.	
7	. .	. .	. .	— 1 57.7	51 18 3.1	1 9.1	— 12 25 33.4	— 7.7	Y.	
8	. .	. .	. .	+ 1 45.9	0 36 53.2	0.6	+ 38 16 45.0	— 14.8	Y.	
9	. .	. .	. .	+ 1 34.0	S. 4 1 40.4	3.9	+ 34 51 54.5	— 14.8	Y.	
10	. .	. .	. .	+ 1 27.9	N. 0 3 27.4	0.1	+ 38 57 6.3	— 15.3	Y.	
11	30.130	78.5	75.0	— 21.0	S. 66 49 42.4	2 9.2	— 27 58 12.8	— 9.0	Y.	
12	. .	. .	. .	. .		. .		. .	Y.	
13	30.060	75.5	73.3	— 1 3.4	N. 73 21 0.7	3 3.8	+ 67 42 16.7	+ 7.3	Y.	
14	. .	. .	. .	+ 2 6.6	S. 47 47 8.8	1 1.4	— 8 54 31.4	— 0.4	Y.	
15	. .	. .	72.2	+ 15.8	N. 0 4 38.3	0.1	+ 38 58 17.2	— 12.8	Y.	
16	30.064	75.2	71.9	+ 2 7.1	N. 30 32 51.0	33.0	+ 69 27 2.8	— 15.0	Y.	
17	. .	. .	. .	— 49.2	S. 4 19 10.4	4.2	+ 34 34 24.2	— 13.3	Y.	
18	. .	. .	. .	+ 1 21.5	0 46 23.1	0.8	+ 38 7 14.9	— 14.1	Y.	
19	30.060	74.7	71.4	— 1 55.5	52 38 10.1	1 13.1	— 13 45 44.4	— 2.8	Y.	
20	. .	. .	. .	+ 1.6	S. 0 5 5.6	0.1	+ 38 48 33.1	— 14.8	Y.	
21	30.065	74.3	71.2	+ 2 34.3	N. 33 12 18.2	36.6	+ 72 6 33.6	— 15.9	Y.	
22	. .	. .	. .	+ 1 19.1	S. 66 41 21.1	2 9.0	— 27 49 51.3	— 1.6	Y.	
23	. .	. .	. .	— 3 39.5	38 51 25.8	45.1	+ 0 1 27.9	— 9.3	Y.	
24	. .	. .	. .	+ 16.0	9 30 20.1	9.4	+ 29 23 9.3	— 15.2	Y.	
25	. .	. .	. .	. .		. .		. .	Y.	
26	30.200	68.0	62.0	— 44.0	39 44 17.3	47.6	— 0 51 26.1	— 2.5	Y.	
27	. .	. .	. .	+ 2 0.4	1 47 8.0	1.8	+ 37 6 29.0	— 12.7	Y.	
28	. .	. .	. .	+ 31.3	80 35 33.6	5 32.2	— 41 47 27.0	+ 9.2	Y.	
29	. .	. .	. .	— 2 21.9	66 17 41.2	2 9.8	— 27 26 12.2	+ 3.0	Y.	
30	. .	. .	. .	+ 18.3	3 55 25.0	3.9	+ 34 58 9.9	— 14.0	Y.	
31	30.204	67.5	60.7	+ 1 7.1	3 56 13.7	3.9	+ 34 57 21.2	— 14.0	Y.	
32	. .	. .	. .	+ 6.3	52 30 15.2	1 14.7	— 13 37 51.1	— 3.4	Y.	
33	. .	. .	. .	— 43.9	52 29 25.0	1 14.7	— 13 37 0.9	— 3.4	Y.	
34	30.210	67.0	59.8	— 2 18.4	52 2 47.9	1 13.6	— 13 10 22.7	— 4.6	Y.	South star.
35	. .	. .	. .	+ 1 16.9	66 41 21.5	2 12.7	— 27 49 55.4	— 1.4	Y.	
36	. .	. .	. .	— 1 21.8	1 43 42.8	1.7	+ 37 9 54.3	— 16.3	Y.	
37	30.216	66.8	59.2	— 53.9	62 29 9.8	1 50.1	— 23 37 21.1	— 4.4	Y.	
38	. .	. .	. .	+ 48.7	62 5 55.1	1 48.3	— 23 14 4.6	— 5.4	Y.	
39	. .	. .	. .	+ 1 32.5	4 1 37.0	+ 4.1	+ 34 51 57.7	— 16.7	Y.	
40	30.206	66.2	58.8	— 2 52.0	58 57 13.2	−65 17.4	— 18 58 17.0	. .	Y.	
41	. .	. .	. .	— 28.7	66 49 39.1	+ 2 13.8	— 27 58 14.1	— 7.9	Y.	
42	. .	. .	. .	+ 31.5	2 5 33.8	2.1	+ 36 48 2.9	— 17.6	Y.	
43	. .	. .	. .	— 2 21.8	59 57 42.0	1 39.5	— 21 5 42.7	— 10.6	Y.	
44	. .	. .	. .	— 1 41.4	0 18 20.5	0.3	+ 38 35 18.0	— 17.9	Y.	
45	30.200	65.0	57.0	— 1 53.6	19 18 9.3	20.2	+ 19 35 9.3	— 17.1	Y.	
46	. .	. .	. .	. .		. .		. .	Y.	
47	30.230	70.0	65.8	+ 16.8	48 55 18.6	1 5.1	— 10 2 44.9	+ 0.4	Y.	
48	. .	. .	. .	— 2 48.9	73 22 19.2	3 7.9	— 34 31 48.3	+ 7.7	Y.	
49	30.230	70.0	65.5	— 2 31.3	80 32 26.7	5 27.9	— 41 44 15.8	+ 9.2	Y.	
50	. .	. .	. .	— 2 20.3	66 17 42.5	2 8.8	— 27 26 12.5	+ 3.1	Y.	
51	. .	. .	. .	— 44.3	4 19 13.4	4.3	+ 34 34 21.1	— 13.9	Y.	
52	. .	. .	. .	+ 44.2	3 15 46.4	3.2	+ 35 37 49.2	— 14.5	Y.	
53	. .	. .	. .	+ 17.9	0 30 13.2	0.5	+ 38 23 25.1	— 15.1	Y.	
54	30.238	69.2	63.8	+ 2 50.7	60 32 50.3	1 40.7	— 21 40 52.2	— 1.8	Y.	
55	. .	. .	. .	— 17.4	S. 43 14 43.3	53.7	— 4 21 58.2	— 7.6	Y.	
56	. .	. .	63.2	+ 1 35.9	N. 0 8 16.2	0.4	+ 39 1 55.4	— 16.4	Y.	
57	30.238	68.0	61.4	— 1 19.6	S. 57 18 47.9	1 29.2	— 18 26 38.3	— 10.3	Y.	
58	. .	. .	. .	— 53.8	59 59 10.8	1 39.0	— 21 7 11.0	— 10.6	Y.	
59	. .	. .	61.3	— 2 41.7	0 57 23.3	1.0	+ 37 56 14.5	— 18.1	Y.	
60	. .	. .	. .	— 28.9	1 24 34.3	+ 1.4	+ 37 29 3.1	— 18.2	Y.	
61	30.240	67.8	61.0	— 2 32.7	52 57 32.4	−63 2.6	— 13 0 51.0	. .	Y.	
62	. .	. .	. .	. .		. .		. .	Y.	
63	30.268	71.0	66.3	+ 1 40.2	1 41 46.4	+ 1.7	+ 37 11 50.7	— 12.3	Y.	
64	. .	. .	. .	— 2 43.4	73 22 17.3	3 7.9	— 34 31 46.4	+ 7.8	Y	
65	30.262	70.8	66.2	— 2 39.3	S. 80 32 26.0	5 27.7	— 41 44 14.9	+ 9.2	Y.	

DATE.	Number.		OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES. A.			B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
							°	′	″	″	″	″	″	″	″	r.	r.	r.
1874.																		
Sept. 24	1		O. Arg. S. 20086 .	8.2	2	I, IX	84	15	3.0	56.8	10.1	55.6	8.2	57.3	1.83	26.754	−0.550	26.227
	2		O. Arg. S. 20095 .	8.0	3	III–VII	"	"	"	"	"	"	"	"	"	30.378	. .	29.833
	3		Lalande 38564 . .	7.5	3	III–VII	20	10	6.3	57.8	15.0	58.5	14.7	1.7	5.67	32.225	. .	31.667
	4		Weisse (2) XX, 304 .	. .	3	III–VII	20	29	58.9	52.9	67.6	51.2	66.8	54.1	58.58	25.900	. .	25.342
	5		Lalande 39884 . .	7.0	3	V–IX	21	15	2.1	54.7	9.1	54.0	9.2	58.2	1.22	32.928	. .	32.360
	6		O. Arg. S. 20896 .	7.0	3	III–VII	86	35	7.3	3.3	17.8	5.3	15.7	5.9	9.22	32.378	. .	31.833
	7		Anon. $20^h\ 55^m\ 56^s$.	7.5	3	III–VII	21	45	4.2	57.2	11.2	56.2	10.5	0.0	3.22	33.168	. .	32.611
	8		O.Arg. S. 21189 (1st *)	. .	3	III–VII	82	30	2.3	55.7	9.3	56.5	7.8	57.0	1.43	32.288	. .	31.742
	9		Lacaille 8790. . .	7.2	3	III–VII	88	49	60.7	54.4	67.9	53.1	64.9	57.0	59.67	31.812	. .	31.268
	10		Anon. $21^h\ 22^m\ 55^s$.	9.0	3	III–VII	82	35	6.6	1.3	15.2	59.4	12.8	2.1	6.23	26.412	. .	25.866
	11		Anon. $21^h\ 46^m\ 52^s$.	6.5	3	III–VII	95	30	9.2	6.5	20.1	6.2	17.9	6.7	11.10	32.597	. .	32.054
	12		O. Arg. S. 22051 .	8.0	3	III–VII	80	0	6.4	3.2	16.2	3.0	13.7	4.5	7.83	32.422	. .	31.876
	13		Lalande 43751 . .	6.5	3	V–IX	21	0	7.2	3.9	17.3	3.9	16.8	4.5	8.93	35.895	. .	35.327
	14		Lalande 44195 . .	6.0	3	III–VII	24	0	7.0	2.0	16.0	3.1	14.2	3.3	7.60	35.376	. .	34.819
	15		Lalande 9271 . .	6.0	3	III–VII	92	20	8.5	6.2	18.3	6.0	14.9	4.6	9.75	33.317	. .	32.773
	16		Lalande 45037 . .	6.5	3	III–VII	20	54	57.1	53.7	65.0	52.5	63.9	52.2	57.40	37.419	. .	36.861
	17		Nadir	. .	.	. .	200	0	2.7	56.2	10.3	56.9	7.0	0.0	2.18	30.467	. .	. .
	18		Moon S.	. .	3	III–VII	65	59	56.4	50.2	65.2	50.8	63.4	52.2	56.37	29.091	. .	28.542
26	19		O. Arg. S. 19104 .	7.5	3	V–IX	80	50	2.7	55.2	10.2	55.2	6.7	58.9	1.48	28.666	−0.677	27.995
	20		Lalande 36513 . .	6.5	3	III–VII	21	44	60.9	52.8	67.1	52.8	67.2	58.2	59.83	26.557	. .	25.873
	21		Anon. $19^h\ 28^m\ 51^s$.	9.0	3	III–VII	100	34	58.1	48.3	62.7	48.3	60.8	53.3	55.25	29.214	. .	28.546
	22		Anon. $19^h\ 49^m\ 27^s$.	7.3	3	III–VII	96	50	7.4	2.2	16.8	1.9	14.1	4.9	7.88	31.755	. .	31.085
	23		Anon. $20^h\ 2^m\ 0^s$. .	9.2	3	III–VII	75	9	60.9	53.7	68.2	54.7	65.8	55.9	59.87	30.757	. .	30.083
	24		Weisse (2) XX, 304 .	7.7	2	VII, IX	20	29	58.9	51.9	65.9	50.8	65.3	54.0	57.80	25.930	. .	25.231
	25		Weisse XX, 729 (S. *)	. .	3	V–IX	72	5	5.2	58.5	10.2	56.9	9.7	2.0	3.75	35.001	. .	34.327
	26		O. Arg. S. 20896 .	6.5	3	III–VII	86	35	6.9	1.9	14.8	4.0	13.5	5.9	7.83	32.325	. .	31.653
	27		Anon. $20^h\ 55^m\ 54^s$.	7.5	3	III–VII	21	45	5.1	59.8	13.6	59.1	12.4	3.1	5.52	33.306	. .	32.622
	28		Anon. $21^h\ 5^m\ 33^s$.	. .	3	V–IX	71	20	1.1	54.8	7.1	54.8	6.1	59.0	0.48	34.383	. .	33.699
	29	1	Draconis (H.) S P. .	. .	3	IV½–V½	320	44	60.7	52.5	71.1	51.4	66.6	55.9	59.70	25.257	. .	24.585
	30		Anon. $21^h\ 29^m\ 12^s$.	9.0	3	III–VII	20	50	10.8	5.4	18.8	5.1	19.2	8.5	11.30	33.399	. .	32.714
	31		Anon. $21^h\ 41^m\ 21^s$.	9.0	2	III, VII	77	50	4.5	58.9	13.9	0.1	11.8	3.1	5.38	32.609	. .	31.937
	32	29	Aquarii (1st *) . .	8.0	3	V–IX	76	24	55.2	50.1	64.4	50.1	61 5	52.0	55.55	27.942	. .	27.270
	33		O. Arg. S. 21962 .	9.5	3	V–IX	85	55	2.9	57.1	10.2	58.0	8.4	0.1	2.78	32.492	. .	31.824
	34		Weisse XXII, 281 .	. .	3	III–VII	65	40	3.7	57.4	11.3	58.0	10.8	1.6	3.80	28.180	. .	27.504
	35		B. A. C. 7861 . .	6.5	3	III–VII	69	10	5.5	59.7	13.8	1.5	11.9	3.2	5.93	35.099	. .	34.424
	36		Lacaille 9271 . .	6.5	3	III–VII	92	20	2.9	57.6	10.9	58.6	7.3	59.1	2.73	33.064	. .	32.393
	37		Nadir	. .	.	. .	199	59	54.5	47.3	61.0	49.0	57.4	52.1	53.55	30.301	. .	. .
Oct. 1	38		Lalande 36051 . .	7.2	3	III–VII	21	20	7.7	3.5	15.4	3.8	14.8	4.1	8.22	34.865	−0.631	34.227
	39		O. Arg. S. 19837 .	8.2	3	III–VII	84	0	6.0	2.3	15.7	4.8	12.5	1.4	7.12	34.135	. .	33.509
	40		Anon. $19^h\ 49^m\ 31^s$.	7.7	3	III–VII	96	50	3.1	0.3	12.2	1.4	8.7	58.9	4.10	31.713	. .	31.089
	41		Anon. $20^h\ 0^m\ 34^s$.	6.5	3	III–VII	20	44	58.7	53.9	67.7	55.3	64.0	53.0	58.77	27.901	. .	27.262
	42		O. Arg. S. 20337 .	8.0	2	I, IX	74	35	6.2	2.8	16.0	6.0	13.0	2.7	7.78	30.698	. .	30.081
	43		O. Arg. S. 20339 .	9.0	3	III–VII	"	"	"	"	"	"	"	"	"	28.552	. .	27.924
	44		Weisse XX, 359 .	9.0	1	V	72	30	8.7	6.9	17.1	8.1	15.4	5.2	10.23	31.901	. .	31.270
	45		Anon. $20^h\ 32^m\ 31^s$.	9.0	3	III–VII	20	55	1.8	59.8	11.1	1.0	7.8	57.6	3.18	29.743	. .	29.105
	46		Anon $20^h\ 49^m\ 58^s$.	9.0	3	III–VII	22	10	0.9	58.2	10.3	59.8	7.2	57.2	2.27	25.399	. .	24.761
	47		Anon. $21^h\ 5^m\ 33^s$.	8.3	3	III–VII	71	20	4.8	1.5	14.1	4.0	9.8	1.6	5.97	34.375	. .	33.746
	48	1	Draconis (H.) S. P. .	. .	3	IV½–V½	320	45	1.8	57.7	13.3	58.3	8.0	56.1	2.53	25.392	. .	24.766
	49		Anon. $21^h\ 41^m\ 26^s$.	9.0	3	III–VII	77	50	3.7	1.8	13.8	4.2	11.2	0.9	5.93	32.576	. .	31.948
	50	29	Aquarii (1st *) . .	. .	2	III, VII	76	25	1.0	57.9	11.1	1.1	7.2	56.1	2.40	28.158	. .	27.531
	51	29	Aquarii (2d *) . .	. .	1	V	"	"	"	"	"	"	"	"	"	28.223	. .	27.592
	52		O. Arg. S. 22049 .	9.0	3	III–VII	80	0	7.5	6.3	18.2	8.3	13.6	3.7	9.60	35.375	. .	34.748
	53		O. Arg. S. 22177 .	8.5	3	III–VII	86	40	3.2	0.9	15.5	5.4	9.2	0.5	5.78	32.039	. .	31.423
	54		Lalande 44195 . .	7.0	3	III–VII	24	0	3.5	0.8	13.6	3.1	9.4	59.1	4.92	35.365	. .	34.727
	55		O. Arg. S. 22383 .	9.0	3	III–VII	80	25	2.4	1.7	13.0	2.5	8.8	58.9	4.55	33.107	. .	32.480
	56		Lalande 45078 . .	7.5	3	III–VII	22	5	1.7	58.3	11.3	1.6	7.2	58.1	3.03	30.269	. .	29.631
	57		O. Arg. S. 22682 .	8.5	3	III–VII	76	55	0.7	58.8	11.2	0.2	7.6	56.2	2.45	30.358	. .	29.730
	58		Lalande 45704 . .	7.3	3	III–VII	78	5	4.8	3.1	15.8	4.9	10.6	0.7	6.65	29.250	. .	28.622
	59		Nadir	. .	.	. .	199	59	58.8	54.8	67.8	58.9	62.4	55.2	59.65	30.468	. .	. .
3	60		B. A. C. 6775 . .	7.5	3	III–VII	88	5	2.2	58.3	15.0	52.2	11.8	57.0	2.75	32.750	−0.609	32.146
	61		Weisse (2) XIX, 1729	8.5	3	V–IX	19	55	9.1	3.9	25.1	58.2	23.6	3.8	10.62	34.189	. .	33.563
	62		δ^1 Cygni	5.5	3	IV–VI	23	15	0.1	55.2	14.1	49.1	12.1	53.9	0.75	29.214	. .	28.603
	63		Anon. $20^h\ 8^m\ 51^s$.	8.3	3	III–VII	20	30	7.5	4.2	24.8	58.3	23.8	3.4	10.33	26.285	. .	25.668
	64		Anon. $20^h\ 26^m\ 24^s$.	9.2	3	III–VII	80	30	4.1	1.8	19.9	55.2	17.7	59.3	6.33	25.380	−0.609	24.775

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1874.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	+ 1 58.3	S. 64 17 0.1	1 57.7	− 25 25 19.0	+ 2.3	Y.	
2	30.280	70.3	65.6	+ 5.2	64 15 7.0	1 57.5	− 25 23 25.7	+ 2.3	Y.	
3	. .	. .	. .	− 52.2	0 9 13.4	0.1	+ 38 44 25.3	− 15.1	Y.	
4	. .	. .	. .	+ 2 26.0	0 32 24.6	0.5	+ 38 21 13.7	− 15.3	Y.	
5	. .	. .	. .	− 1 14.0	1 13 47.3	1.2	+ 37 39 50.3	− 16.0	Y.	
6	30.284	69.8	64.3	− 57.4	66 34 11.8	2 11.0	− 27 42 44.0	− 1.5	Y.	
7	. .	. .	. .	− 1 21.9	1 43 41.4	1.7	+ 37 9 55.7	− 16.7	Y.	
8	30.280	69.3	63.5	− 54.6	62 29 6.8	1 49.4	− 23 37 17.4	− 4.3	Y.	
9	. .	. .	. .	− 39.7	68 49 19.9	2 26.6	− 29 58 7.7	− 3.6	Y.	
10	. .	. .	. .	+ 2 9.5	62 37 15.8	1 50.1	− 23 45 27.1	− 5.9	Y.	Faint.
11	30.280	68.2	61.5	− 1 4.4	75 29 6.7	3 38.1	− 36 39 6.0	− 4.9	Y.	
12	. .	. .	. .	− 58.8	59 59 9.0	1 39.1	− 21 7 9.3	− 10.5	Y.	
13	. .	. .	. .	− 2 46.9	0 57 22.0	1.0	+ 37 56 15.8	− 18.4	Y.	
14	. .	. .	. .	− 2 31.0	3 57 36.6	4.0	+ 34 55 58.2	− 18.4	Y.	
15	30.280	67.0	60.7	− 1 26.9	72 18 42.8	2 58.3	− 33 28 2.3	− 11.0	Y.	
16	. .	. .	. .	− 3 35.0	0 51 22.4	+ 0.9	+ 38 2 15.5	− 18.6	Y.	
17	. .	. .	. .	. .		. .		. .	Y.	
18	30.290	66.8	60.2	+ 45.7	46 0 42.1	−59 12.0	− 6 7 51.3	. .	Y.	
19	30.074	72.2	69.4	+ 1 2.8	60 51 4.3	+ 1 40.3	− 21 59 5.8	+ 4.6	Y.	
20	. .	. .	. .	+ 2 9.3	1 47 9.1	1.8	+ 37 6 27.9	− 13.0	Y.	
21	30.076	72.2	68.5	+ 45.6	80 35 40.8	5 26.0	− 41 47 28.0	+ 7.9	Y.	
22	. .	. .	67.4	− 34.0	76 49 33.9	3 55.8	− 37 59 50.9	+ 6.5	Y.	
23	. .	. .	. .	− 2.6	55 9 57.3	1 20.9	− 16 17 39.4	− 1.6	Y.	
24	. .	. .	. .	+ 2 29.4	0 32 27.2	0.5	+ 38 21 11.1	− 15.6	Y.	
25	30.078	71.5	66.2	− 2 15.6	52 2 48.1	1 12.3	− 13 10 21.6	− 4.6	Y.	
26	. .	. .	. .	− 51.8	66 34 16.0	2 9.9	− 27 42 47.1	− 1.3	Y.	
27	. .	. .	. .	− 1 22.2	1 43 43.3	1.7	+ 37 9 53.8	− 17.0	Y.	
28	. .	. .	. .	− 1 55.9	S. 51 18 4.5	1 10.6	− 12 25 36.3	− 7.4	Y.	
29	30.080	70.3	64.5	+ 2 49.7	N. 59 12 10.6	1 34.8	+ 81 52 35.8	+ 15.7	Y.	
30	. .	. .	. .	− 1 25.1	S. 0 48 46.2	0.8	+ 38 4 51.8	− 18.0	Y.	
31	. .	. .	. .	− 1 0.7	57 49 4.7	1 29.9	− 18 56 55.8	− 8.5	Y.	
32	. .	. .	. .	+ 1 25.6	56 26 21.1	1 25.4	− 17 34 7.7	− 10.0	Y.	
33	. .	. .	. .	− 57.2	65 54 5.6	2 6.2	− 27 2 33.0	− 8.6	Y.	
34	30.084	69.8	63.7	+ 1 18.2	45 41 22.0	58.1	− 6 48 41.3	− 13.5	Y.	
35	. .	. .	. .	− 2 18.7	49 7 47.3	1 5.6	− 10 15 14.1	− 13.7	Y.	
36	30.074	69.3	63.4	− 1 15.0	72 18 47.7	2 56.2	− 33 28 5.1	− 10.8	Y.	
37	. .	. .	. .	. .		. .		. .	Y.	
38	. .	. .	. .	− 2 12.5	1 17 55.8	1.3	+ 37 35 41.7	− 12.7	Y.	
39	29.894	63.2	55.4	− 1 50.0	63 58 17.1	1 57.0	− 25 6 35.3	+ 3.9	Y.	
40	. .	. .	. .	− 34.1	76 49 30.0	4 0.3	− 37 59 51.5	+ 7.0	Y.	
41	. .	. .	. .	+ 1 25.8	0 46 24.6	0.8	+ 38 7 13.4	− 15.5	Y.	
42	. .	. .	. .	− 2.5	54 35 5.2	1 20.7	− 15 42 47.1	− 1.8	Y.	
43	29.896	62.5	54.4	+ 1 5.1	54 36 12.8	1 20.8	− 15 43 54.8	− 1.8	Y.	
44	. .	. .	. .	− 39.8	52 29 30.4	1 14.9	− 13 37 6.5	− 3.1	Y.	
45	. .	. .	. .	+ 28.0	0 55 31.2	0.9	+ 37 58 6.7	− 16.9	Y.	
46	. .	. .	. .	+ 2 44.2	2 12 46.5	2.2	+ 36 40 50.1	− 17.4	Y.	
47	29.888	61.2	53.0	− 1 57.4	S. 51 18 8.6	1 11.9	− 12 25 41.7	− 7.1	Y.	
48	. .	. .	. .	+ 2 44.0	N. 59 12 13.4	1 36.4	+ 81 52 31.4	+ 16.4	Y.	
49	29.874	61.0	53.3	− 1 1.1	S. 57 49 4.9	1 31.3	− 18 56 57.4	− 8.1	Y.	
50	. .	. .	. .	+ 1 17.4	56 26 19.8	1 26.6	− 17 34 7.6	− 9.6	Y.	
51	. .	. .	. .	+ 1 15.5	56 26 17.9	1 26.6	− 17 34 5.7	− 9.6	Y.	
52	. .	. .	. .	− 2 28.8	59 57 40.8	1 39.3	− 21 5 41.3	− 9.9	Y.	
53	29.860	60.7	53.1	− 44.6	66 39 21.2	2 12.7	− 27 47 55.1	− 9.4	Y.	
54	. .	. .	. .	− 2 28.1	3 57 36.8	4.0	+ 34 55 57.9	− 19.9	Y.	
55	. .	. .	. .	− 1 17.8	60 23 46.8	1 41.0	− 21 31 49.0	− 12.0	Y.	
56	. .	. .	. .	+ 11.6	2 5 14.6	2.1	+ 36 48 22.1	− 20.2	Y.	
57	. .	. .	. .	+ 8.5	56 55 10.9	1 28.2	− 18 3 0.3	− 14.9	Y.	
58	29.846	60.5	53.3	+ 43.2	58 5 49.8	1 32.2	− 19 13 43.2	− 15.2	Y.	
59	. .	. .	. .	. .		. .		. .	Y.	
60	30.112	65.0	57.8	− 1 7.2	S. 68 3 55.5	2 21.6	− 29 12 38.3	+ 4.8	Y.	
61	. .	. .	. .	− 1 51.7	N. 0 6 41.1	0.1	+ 39 0 20.0	− 15.5	Y.	
62	. .	. .	. .	+ 43.8	S. 3 15 44.5	3.3	+ 35 37 51.0	− 15.3	Y.	
63	. .	. .	. .	+ 2 15.8	0 32 26.1	0.5	+ 38 21 12.2	− 16.1	Y.	
64	30.120	64.2	56.2	+ 2 43.8	S. 60 32 50.1	1 41.9	− 21 40 53.2	− 1.2	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES. A.			B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
1874.						°	′	″	″	″	″	″	″	″	r.	r.	r.
Oct. 3	1	Anon. $21^h\ 5^m\ 33^s$.	8.5	3	III–VII	71	20	5.4	3.2	20.8	57.7	18.6	4.0	8.28	34.416	−0.609	33.809
	2	Anon. $21^h\ 15^m\ 59^s$.	8.3	3	III–VII	10	5	4.7	1.8	21.8	58.2	19.2	59.4	7.52	32.057	. .	31.437
	3	B. A. C. 7466. . .	6.5	2	VII, IX	84	35	5.1	3.8	23.7	0.0	19.9	3.4	9.32	28.718	. .	28.119
	4	Nadir	. .	.	. .	200	0	0.4	55.3	14.8	51.5	11.2	57.0	1.70	30.513	. .	. .
5	5	52 Cygni	. .	3	V–IX	28	35	7.0	6.3	24.9	1.8	24.7	3.8	11.42	25.850	−0.425	25.416
	6	η Microscopii . . .	. .	3	III–VII	100	40	4.8	1.8	20.6	59.0	16.2	58.8	6.87	28.326	. .	27.910
	7	B. A. C. 7378 . . .	. .	3	III–VII	79	35	3.4	1.9	20.3	59.3	17.2	0.1	7.03	33.280	. .	32.859
	8	Lacaille 8790. . .	. .	3	III–VII	88	50	6.7	7.2	23.6	2.8	21.2	4.7	11.03	32.090	. .	31.671
	9	Anon. $21^h\ 46^m\ 44^s$.	. .	3	III–VII	21	4	58.2	57.1	73.9	52.9	72.8	53.3	61.37	34.417	. .	33.985
	10	Nadir	. .	.	. .	199	59	59.1	56.9	74.4	54.4	70.2	55.0	61.67	30.327	. .	. .
	11	Lalande 43717 . .	6.0	3	III–VII	22	49	58.7	55.8	73.9	51.9	70.8	53.6	60.78	26.650	. .	26.218
10	12	B. A. C. 6775 . .	. .	3	III–VII	88	5	1.2	56.2	13.8	49.7	13.8	56.8	1.92	32.431	−0.506	31.930
	13	B. A. C. 6834 . .	. .	2	VI, VII	358	0	8.3	4.1	26.8	0.1	25.2	4.0	11.42	29.708	. .	29.185
	14	Weisse (2) XX, 189.	8.8	2	VII, IX	20	10	3.0	57.8	18.8	51.7	19.3	59.4	5.00	30.075	. .	29.544
	15	34 Cygni	6.0	3	III–VII	21	15	4.7	59.3	19.2	54.8	19.8	2.0	6.63	31.038	. .	30.525
	16	B. A. C. 7076 . .	. .	3	III–VII	10	25	1.3	56.8	17.3	53.0	17.1	57.7	3.87	33.599	. .	33.082
	17	Anon. $20^h\ 32^m\ 37^s$.	8.5	3	III–VII	21	5	4.7	59.8	19.1	54.7	19.8	1.8	6.65	34.367	. .	33.854
	18	52 Cygni	4.5	3	III–VII	28	35	6.7	0.2	21.6	56.9	21.2	3.8	8.40	25.804	. .	25.292
	19	B. A. C. 7255 . .	6.0	3	III–VII	54	49	58.2	53.1	70.5	46.6	71.2	52.2	58.63	31.107	. .	30.600
	20	η Microscopii . . .	. .	3	III–VII	100	40	2.8	57.2	16.8	51.2	13.9	58.1	3.33	27.930	. .	27.433
	21	Anon. $21^h\ 5^m\ 31^s$.	8.5	3	III–VII	71	20	1.4	56.7	14.7	50.7	13.0	58.1	2.43	34.142	. .	33.638
	22	1 Draconis (H.) S. P. .	. .	3	IV½–V½	320	45	1.7	55.5	17.8	49.6	15.2	55.0	2.63	25.349	. .	24.848
	23	B. A. C. 7517 . .	7.0	3	III–VII	74	20	6.3	2.6	21.8	57.0	19.8	3.1	8.43	29.240	. .	28.737
	24	ι Piscis Australis . .	5.0	3	III–VII	92	25	7.1	3.2	21.2	57.2	18.7	2.6	8.33	27.664	. .	27.164
	25	Weisse (2) XXI, 1140	7.0	3	III–VII	20	40	6.7	2.9	22.1	57.2	21.9	3.0	8.97	33.438	. .	32.924
	26	ϵ^2 Aquarii	5.0	3	III–VII	71	5	0.8	56.8	14.8	51.2	13.8	58.1	2.58	33.821	. .	33.317
	27	B. A. C. 7810 . .	. .	3	IV–VI	352	50	8.7	4.8	25.8	59.3	24.0	5.0	11.27	31.724	. .	31.211
	28	Anon. $22^h\ 30^m\ 27^s$.	7.0	3	III–VII	22	45	6.1	2.7	21.8	56.5	20.7	4.2	8.67	27.734	. .	27.221
	29	O. Arg. N. 24553 .	7.5	3	IV–VI	5	20	4.1	0.8	22.1	4.9	18.2	2.1	8.70	34.270	. .	33.760
	30	Lalande 44862 (1st *)	8.3	3	III–VII	23	15	1.9	58.7	17.3	52.1	16.2	58.5	4.12	34.803	. .	34.290
	31	Lalande 45078 . .	7.8	3	V–IX	22	5	3.0	58.8	19.8	53.2	17.2	59.9	5.32	30.291	. .	29.769
	32	Weisse (2) 34 (1st*)	8.0	3	III–VII	22	45	0.1	54.8	14.1	49.5	12.8	56.8	1.35	35.380	. .	34.868
	33	Lalande 45588 . .	7.5	3	III–VII	21	40	0.9	55.8	15.4	50.4	13.9	57.2	2.27	36.784	. .	36.271
	34	Radcliffe 6064 . .	. .	2	IV, VI	4	25	0.1	53.4	13.2	48.0	11.2	54.6	0.08	32.602	. .	32.076
	35	Lalande 46188 . .	6.0	3	III–VII	21	50	5.7	1.2	22.0	56.2	20.5	3.1	8.12	36.048	. .	35.535
	36	Weisse (2) XXIII, 994	8.5	3	III–VII	22	0	4.4	0.4	21.2	55.4	20.1	1.1	7.10	31.386	. .	30.873
	37	Nadir	. .	.	. .	199	59	57.1	51.1	71.2	47.3	68.2	53.5	58.07	30.294	. .	. .
13	38	52 Cygni	. .	3	III–VII	28	35	4.3	5.8	23.2	2.8	21.2	1.2	9.75	25.899	−0.510	25.383
	39	B. A. C. 7255. . .	. .	3	IV–VI	54	50	3.0	3.3	19.8	59.7	18.5	58.2	7.08	31.512	. .	31.002
	40	η Capricorni . . .	. .	2	VIII, IX	79	15	4.4	7.2	23.7	2.3	18.4	1.1	9.52	34.628	. .	34.132
	41	B. A. C. 7378. . .	7.0	3	III–VII	79	35	0.8	1.0	18.5	58.0	13.6	55.9	4.63	33.279	. .	32.773
	42	Anon. $21^h\ 21^m\ 8^s$.	8.2	3	V–IX	23	35	7.3	7.9	25.7	5.3	21.1	2.0	11.55	29.951	. .	29.426
	43	B. A. C. 7517. . .	7.0	3	III–VII	74	19	59.4	59.8	76.9	58.0	71.4	53.2	63.12	29.257	. .	28.743
	44	Anon. $21^h\ 42^m\ 27^s$.	9.2	2	III–VII	56	50	0.9	59.3	17.1	58.9	13.8	57.0	4.50	33.270	. .	32.759
	45	Weisse XXII, 1398.	7.7	3	III–VII	71	4	59.6	61.2	76.2	60.0	73.0	57.2	64.53	28.910	. .	28.402
	46	Weisse XXII, 281 .	8.0	3	III–VII	65	40	6.2	5.9	19.3	4.9	24.6	1.9	10.47	28.399	. .	27.890
	47	Anon. $22^h\ 18^m\ 26^s$.	8.4	3	IV–VI	20	20	7.0	8.3	26.8	7.0	21.6	3.0	12.28	34.201	. .	33.689
	48	Nadir	. .	.	. .	199	59	59.3	59.1	75.2	58.2	68.8	54.9	62.58	30.442	. .	. .
	49	56 Pegasi	4.0	3	III–VII	34	5	3.1	4.8	21.2	3.2	15.2	0.1	7.93	29.370	. .	28.856
	50	Lalande 45588 . .	7.7	3	III–VII	21	40	3.9	4.4	21.2	2.4	16.3	0.0	8.03	37.009	. .	36.492
	51	Weisse (2) XXIII, 457	7.7	3	III–VII	19	59	58.2	60.4	76.6	57.5	70.7	53.2	62.77	35.027	. .	34.509
	52	16 Piscium	5.5	3	III–VII	57	29	58.8	56.6	73.8	56.1	68.8	53.3	61.23	33.737	. .	33.227
	53	B. A. C. 8296 . .	5.5	3	III–VII	37	55	6.1	8.1	23.8	5.9	18.3	2.2	10.73	31.416	. .	30.902
	54	ϵ^2 Piscium	5.7	3	III–VII	51	5	4.1	6.8	22.8	5.7	16.5	1.1	9.50	29.792	. .	29.281
15	55	B. A. C. 6834 . .	. .	3	IV–VI	358	0	4.3	2.7	21.7	0.0	20.6	0.2	8.25	29.603	−0.511	29.087
	56	Anon. $20^h\ 5^m\ 35^s$.	8.5	3	III–VII	68	5	0.0	58.9	15.6	54.2	13.8	57.6	3.35	28.908	. .	28.390
	57	34 Cygni	. .	3	III–VII	21	15	2.8	58.8	15.3	55.0	15.9	57.8	4.27	31.025	. .	30.507
	58	B. A. C. 7076 . .	. .	3	III–VII	10	25	1.8	1.5	19.7	57.8	18.2	57.8	6.13	33.710	. .	33.188
	59	Anon. $20^h\ 32^m\ 56^s$.	9.5	1	V	75	35	0.9	59.7	17.1	55.7	15.2	57.2	4.30	36.605	. .	36.094
	60	ν Cygni	. .	3	III–VII	18	15	2.7	0.7	19.8	56.9	18.2	58.8	6.18	35.757	. .	35.238
	61	η Capricorni . . .	. .	3	III–VII	79	15	0.4	0.7	15.8	55.0	14.8	57.9	4.10	34.351	. .	33.844
	62	Anon. $21^h\ 8^m\ 36^s$.	8.8	3	III–VII	74	40	4.9	5.5	22.6	2.1	22.1	3.1	10.05	31.678	. .	31.170
	63	19 Aquarii	. .	3	III–VII	69	10	0.3	0.8	16.7	57.1	16.3	59.1	5.05	31.818	. .	31.310
	64	Anon. $21^h\ 22^m\ 58^s$.	8.8	3	III–VII	82	35	1.8	59.4	15.9	56.1	13.6	57.2	4.00	26.665	. .	26.155
	65	B. A. C. 7517 . .	7.2	3	III–VII	74	20	3.9	1.4	18.8	58.2	17.2	59.2	6.45	29.250	−0.511	28.742

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1874.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	30.126	64.2	55.5	− 1 59.4	S. 51 18 8.9	1 12.1	− 12 25 42.2	− 7.0	Y.	
2	. .	. .	. .	− 45.0	N. 9 55 37.5	10.2	+ 48 49 26.5	− 19.7	Y.	
3	30.126	62.8	55.3	+ 59.0	S. 64 36 8.3	2 1.3	− 25 44 30.8	− 4.5	Y.	
4	. .	. .	. .	. .		. .		. .	Y.	
5	30.210	58.8	50.5	+ 2 23.7	8 37 35.1	8.8	+ 30 15 54.9	− 16.4	Y.	
6	30.210	58.3	50.2	+ 1 5.5	80 41 12.4	5 43.4	− 41 53 17.0	+ 2.7	Y.	
7	. .	. .	. .	− 1 29.6	59 33 37.4	1 39.5	− 20 41 38.1	− 4.5	Y.	
8	. .	. .	49.9	− 52.4	68 49 18.7	2 30.3	− 29 58 10.2	− 2.4	Y.	
9	. .	. .	. .	− 2 4.9	1 2 56.5	1.1	+ 37 50 41.2	− 19.9	Y.	
10	. .	. .	. .	. .		. .		. .	Y.	
11	30.200	54.2	47.4	+ 1 58.6	2 51 59.3	3.0	+ 36 1 36.5	− 20.4	Y.	
12	29.730	67.0	61.4	− 1 0.5	S. 68 4 1.4	2 19.1	− 29 12 41.7	+ 4.9	Y.	
13	. .	. .	. .	+ 25.5	N. 21 59 23.0	22.8	+ 60 53 24.6	− 18.1	Y.	
14	. .	. .	. .	+ 14.3	S. 0 10 19.3	0.2	+ 38 43 19.3	− 16.7	Y.	
15	. .	. .	. .	− 16.4	S. 1 14 50.2	1.2	+ 37 38 47.4	− 16.9	Y.	
16	29.730	66.0	60.3	− 1 36.6	N. 9 36 32.7	9.6	+ 48 30 21.1	− 19.0	Y.	
17	. .	. .	. .	− 2 0.8	S. 1 3 5.9	1.0	+ 37 50 31.9	− 17.9	Y.	
18	. .	. .	. .	+ 2 27.5	8 37 35.9	8.6	+ 30 15 54.3	− 16.9	Y.	
19	. .	. .	. .	− 18.8	34 49 39.8	39.4	+ 4 3 19.6	− 10.9	Y.	
20	29.740	65.5	59.7	+ 1 21.5	80 41 24.9	5 31.5	− 41 53 17.6	+ 3.1	Y.	
21	. .	. .	. .	− 1 54.0	S. 51 18 8.4	1 10.5	− 12 25 40.1	− 6.9	Y.	
22	. .	. .	60.1	+ 2 41.5	N. 59 12 15.9	1 34.6	+ 81 52 30.7	+ 18.8	Y.	
23	. .	. .	. .	+ 39.6	S. 54 20 48.0	1 18.7	− 15 28 27.9	− 7.9	Y.	
24	29.750	65.0	60.3	+ 1 28.9	72 26 37.2	2 56.8	− 33 35 55.2	− 2.9	Y.	
25	. .	. .	. .	− 1 31.6	0 38 37.3	0.6	+ 38 15 0.9	− 20.9	Y.	
26	. .	. .	. .	− 1 44.0	S. 51 3 18.6	1 10.1	− 12 10 49.9	− 11.2	Y.	
27	29.760	64.8	59.4	− 37.9	N. 27 10 26.7	29.1	+ 66 4 34.6	− 22.6	Y.	
28	. .	. .	. .	+ 1 27.1	S. 2 46 35.8	2.8	+ 36 7 0.2	− 21.7	Y.	
29	. .	. .	. .	− 1 57.8	N. 14 41 49.1	14.9	+ 53 35 42.8	− 22.8	Y.	
30	. .	. .	. .	− 2 14.5	S. 3 12 49.7	3.2	+ 35 40 45.9	− 22.0	Y.	
31	. .	. .	. .	+ 7.3	2 5 12.6	2.1	+ 36 48 24.1	− 22.1	Y.	
32	. .	. .	. .	− 2 32.6	2 42 28.8	2.7	+ 36 11 7.3	− 22.2	Y.	
33	. .	. .	. .	− 3 16.5	S. 1 36 45.7	1.6	+ 37 16 51.5	− 22.3	Y.	
34	29.768	64.4	59.5	− 1 5.1	N. 15 36 5.0	15.8	+ 54 29 59.6	− 22.6	Y.	
35	. .	. .	. .	− 2 53.5	S. 1 47 14.7	1.8	+ 37 6 22.3	− 22.3	Y.	
36	. .	. .	. .	− 27.3	1 59 39.8	2.0	+ 36 53 57.5	− 22.2	Y.	
37	. .	. .	. .	. .		. .		. .	Y.	
38	. .	. .	44.0	+ 2 24.7	8 37 34.4	9.0	+ 30 15 55.4	− 17.1	Y.	
39	30.284	54.2	43.6	− 31.4	34 49 35.7	41.4	+ 4 3 21.7	− 10.8	Y.	
40	. .	. .	. .	− 2 9.5	59 13 0.0	1 39.8	− 20 21 1.0	− 3.5	Y.	
41	30.286	53.5	43.0	− 1 26.9	59 33 37.7	1 41.2	− 20 41 40.1	− 4.3	Y.	
42	. .	. .	. .	+ 18.0	3 35 29.6	3.8	+ 35 18 5.4	− 19.9	Y.	
43	. .	. .	. .	+ 39.4	54 20 42.5	1 23.1	− 15 28 26.8	− 7.6	Y.	
44	. .	. .	. .	− 1 26.5	36 48 38.0	44.7	+ 2 4 16.1	− 13.5	Y.	
45	30.290	51.2	41.8	+ 50.1	51 5 54.6	1 14.0	− 12 13 29.8	− 10.8	Y.	
46	. .	. .	. .	+ 1 6.1	45 41 16.6	1 1.2	− 6 48 39.0	− 13.2	Y.	
47	30.290	50.8	41.8	− 1 55.6	0 18 16.7	0.3	+ 38 35 21.8	− 22.2	Y.	
48	. .	. .	. .	. .		. .		. .	Y.	
49	29.286	51.0	41.3	+ 35.9	14 5 43.8	15.0	+ 24 47 40.0	− 21.5	Y.	
50	. .	. .	. .	− 3 23.4	S. 1 36 44.6	1.7	+ 37 16 52.5	− 22.8	Y.	
51	. .	. .	. .	− 2 21.3	N. 0 2 18.5	0.0	+ 38 55 57.3	− 23.0	Y.	
52	. .	. .	. .	− 1 41.2	S. 37 28 20.1	45.9	+ 1 24 32.8	− 19.0	Y.	
53	. .	. .	. .	− 28.3	17 54 42.5	19.4	+ 20 58 36.9	− 21.9	Y.	
54	30.278	49.8	40.2	+ 22.5	S. 31 5 32.0	36.2	+ 7 47 30.6	− 20.8	Y.	
55	30.284	55.5	49.2	+ 28.6	N. 21 59 23.2	23.8	+ 60 53 25.8	− 18.2	Y.	
56	. .	. .	. .	+ 50.2	S. 48 5 53.5	1 5.6	− 9 13 20.3	− 3.5	Y.	
57	. .	. .	. .	− 15.9	S. 1 14 48.4	1.3	+ 37 38 49.1	− 17.0	Y.	
58	. .	. .	. .	− 1 39.9	N. 9 36 33.8	10.0	+ 48 30 22.6	− 19.2	Y.	
59	30.288	54.8	48.0	− 3 11.0	S. 55 31 53.3	1 25.8	− 16 39 40.3	− 2.8	Y.	
60	. .	. .	. .	− 2 44.1	N. 1 47 38.0	1.9	+ 40 41 18.7	− 19.6	Y.	
61	. .	. .	. .	− 2 0.5	S. 59 13 3.6	1 38.9	− 20 21 3.7	− 3.3	Y.	
62	30.280	54.0	47.2	− 36.7	54 39 33.4	1 23.2	− 15 47 17.8	− 5.7	Y.	
63	. .	. .	. .	− 41.0	49 9 24.0	1 8.3	− 10 16 53.5	− 8.2	Y.	
64	. .	. .	. .	+ 2 0.4	62 37 4.4	1 53.8	− 23 45 19.4	− 4.1	Y.	
65	. .	. .	. .	+ 39.4	S. 5 20 45.9	1 22.3	− 15 28 29.4	− 7.4	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
1874.						° ′ ″	″	″	″	″	″	″	r.	r.	r.
Oct. 15	1	Anon. $21^h\ 42^m\ 23^s$.	9.2	2	III, VII	56 50 4.9	59.4	19.8	1.8	20.6	2.9	8.23	33.438	−0.511	32.926
	2	B. A. C. 7647 . .	. .	3	III–VII	97 50 4.4	3.9	20.8	59.2	19.3	2.0	8.27	32.814	. .	32.311
	3	Weisse XXII, 1398.	7.5	3	III–VII	71 5 4.8	3.4	20.8	1.0	19.3	3.1	8.73	28.954	. .	28.445
	4	ϵ^2 Aquarii	6.0	3	III–VII	" " "	"	"	"	"	"	"	34.058	. .	33.549
	5	30 Pegasi	5.5	3	III–VII	53 45 9.2	7.1	25.0	3.2	23.8	5.2	12.25	34.168	. .	33.656
	6	Anon. $22^h\ 24^m\ 36^s$.	. .	2	III, VII	52 20 6.8	6.1	22.2	2.5	21.5	5.4	10.75	39.239	. .	38.726
	7	O. Arg. N. 24553 .	7.5	3	III–VII	5 20 8.2	9.3	26.0	3.0	24.3	6.5	12.88	34.414	. .	33.890
	8	Nadir	. .	.	. .	200 0 8.2	6.3	24.8	4.1	22.2	6.2	11.97	30.745	. .	. .
	9	B. A. C. 8094 . .	5.5	3	III–VII	63 5 7.8	8.6	23.7	3.9	22.6	5.9	12.08	33.930	. .	33.420
	10	Weisse XXIII, 457 .	7.8	3	III–VII	20 0 1.0	1.8	18.0	56.8	16.2	56.9	5.12	34.945	. .	34.426
	11	16 Piscium	. .	3	III–VII	57 30 1.2	58.8	14.2	55.9	14.3	56.4	3.47	33.725	. .	33.274
	12	B. A. C. 8296 . .	6.0	3	III–VII	37 55 0.9	0.6	15.9	55.8	16.1	56.9	4.37	31.156	. .	30.641
	13	ϵ^3 Piscium	. .	3	III–VII	51 5 6.9	5.0	19.8	1.2	22.2	3.1	9.70	29.756	. .	29.244
17	14	Anon. $22^h\ 4^m\ 47^s$.	. .	3	V–IX	85 55 2.7	0.4	16.2	55.8	17.2	0.2	5.42	32.797	−0.532	32.275
	15	Lalande 43717 . .	7.0	3	III–VII	22 49 59.1	54.7	71.8	47.4	73.1	55.0	60.18	26.810	. .	26.277
	16	39 Pegasi.	. .	3	III–VII	39 20 0.7	57.9	14.9	53.0	16.2	0.2	3.82	34.265	. .	33.730
	17	Anon. $22^h\ 33^m\ 57^s$.	8.3	3	III–VII	22 9 59.4	55.2	72.7	49.1	72.4	56.0	60.80	33.013	. .	32.474
	18	Lalande 44862 (1st *)	8.5	3	V–IX	23 15 7.1	4.0	22.2	58.2	24.0	4.8	10.05	34.722	. .	34.175
	19	B. A. C. 8094 . .	. .	3	III–VII	63 5 7.9	3.8	22.0	59.4	23.1	5.1	10.22	33.828	. .	33.297
	20	Radcliffe 6081 . .	7.5	3	IV–VI	4 45 5.0	0.7	20.7	54.7	19.2	2.0	7.05	34.283	. .	33.747
	21	Lalande 46188 . .	. .	3	III–VII	21 50 4.9	2.3	20.6	56.8	21.7	3.9	8.37	36.159	. .	35.620
	22	Anon. $23^h\ 42^m\ 22^s$.	8.5	3	IV–VI	355 45 5.1	3.8	21.8	57.3	21.2	2.9	8.68	25.988	. .	25.450
	23	ϵ^3 Piscium	. .	3	III–VII	51 5 3.2	0.9	17.7	55.9	18.7	1.9	6.38	29.592	. .	29.059
	24	Lalande 17 . . .	7.0	3	III–VII	22 10 2.8	1.0	18.8	55.5	19.6	0.6	6.38	36.726	. .	36.187
	25	Weisse (2) O, 256 .	8.3	3	III–VII	23 5 7.9	5.4	23.8	59.7	23.8	6.2	11.13	37.085	. .	36.546
	26	Lalande 251 . . .	7.3	2	VIII, IX	" " "	"	"	"	"	"	"	36.396	. .	35.837
	27	Lalande 656 . . .	7.0	3	III–VII	21 15 6.5	3.7	21.2	58.3	22.8	3.2	9.28	30.047	. .	29.508
	28	Lalande 884 . . .	6.5	3	III–VII	21 20 1.1	58.7	15.1	53.0	16.9	58.9	3.95	31.140	. .	30.601
	29	Lalande 1443 . .	6.0	3	III–VII	21 0 4.7	1.8	19.2	56.5	22.2	1.0	7.57	28.069	. .	27.530
	30	Anon. $0^h\ 51^m\ 55^s$.	9.0	3	V–IX	57 0 oblit.	0.4	18.2	55.9	19.9	2.8	6.44	35.992	. .	35.457
	31	O. Arg. S. 626 . .	6.0	3	V–IX	83 34 59.3	57.1	73.7	50.8	73.2	55.9	61.67	37.486	. .	36.964
	32	Weisse I, 89. . .	8.3	3	III–VII	58 5 6.3	4.7	22.8	0.6	25.5	0.9	11.63	35.344	. .	34.812
	33	Nadir	. .	.	. .	200 0 4.0	2.2	18.8	57.6	18.8	2.2	7.27	30.614	. .	. .
20	34	Weisse (2) XX, 329.	7.5	3	III–VII	20 9 59.5	56.3	75.2	52.3	74.8	55.7	62.30	36.920	−0.549	36.363
	35	B. A. C. 7023 . .	7.2	3	III–VII	71 0 4.0	1.8	18.1	57.6	17.7	2.6	6.97	32.568	. .	32.021
	36	B. A. C. 7130 . .	7.0	3	III–VII	61 45 1.1	57.3	14.8	52.6	13.9	57.4	2.85	32.700	. .	32.152
	37	52 Cygni	. .	3	V–IX	28 35 0.1	56.3	14.8	54.2	15.2	58.2	3.13	25.730	. .	25.169
	38	ν Cygni	4.5	3	III–VII	18 15 3.4	1.4	19.1	52.2	18.2	59.7	6.33	35.791	. .	35.234
	39	η Capricorni . . .	5.0	3	III–VII	79 15 2.0	1.2	18.0	55.2	16.8	59.2	5.40	34.370	. .	33.825
	40	Anon. $21^h\ 8^m\ 30^s$.	8.5	3	III–VII	74 40 1.4	59.7	18.7	55.9	16.2	59.2	5.18	31.723	. .	31.177
	41	ι Capricorni . . .	6.0	3	III–VII	76 15 1.4	58.6	17.9	55.2	16.6	57.6	4.55	32.036	. .	31.490
	42	ι Piscis Australis. .	5.5	3	III–VII	92 25 0.0	0.1	14.7	53.6	13.2	56.1	2.95	27.704	. .	27.161
	43	Anon. $21^h\ 46^m\ 56^s$.	8.0	3	III–VII	20 35 2.8	1.8	18.8	57.1	18.7	0.1	6.55	33.734	. .	33.177
	44	Lalande 9003 . .	7.0	3	III–VII	86 50 3.2	0.8	18.3	57.8	16.8	1.4	6.38	31.421	. .	30.877
	45	Moon S.	. .	3	III–VII	76 5 6.2	5.9	24.2	2.0	22.2	4.2	10.78	30.239	. .	29.693
	46	Nadir	. .	.	. .	200 0 3.8	1.2	19.8	56.5	16.6	1.8	6.62	30.609	. .	. .
21	47	ρ Aquilæ	5.0	3	III–VII	44 5 2.7	0.4	16.1	53.9	17.7	1.1	5.32	32.400	−0.570	31.827
	48	B. A. C. 7023 . .	. .	3	III–VII	71 0 5.1	1.9	18.2	56.5	19.6	5.3	7.77	32.593	. .	32.025
	49	B. A. C. 7130 . .	6.0	3	III–VII	61 45 2.2	57.9	14.8	51.2	15.2	0.4	3.62	32.756	. .	32.187
	50	52 Cygni	. .	3	III–VII	28 35 4.0	0.2	18.3	55.8	20.1	4.1	7.08	25.870	. .	25.294
	51	ν Cygni	5.0	3	III–VII	18 15 6.9	2.2	21.8	57.4	21.2	4.2	8.95	35.915	. .	35.337
	52	η Capricorni . . .	. .	3	III–VII	79 15 3.4	1.7	18.8	56.0	18.3	2.9	6.85	34.442	. .	33.876
	53	ι Capricorni . . .	. .	3	III–VII	76 15 1.6	0.1	17.3	55.1	17.3	0.0	5.23	32.066	. .	31.499
	54	ι Piscis Australis. .	. .	3	III–VII	92 25 3.9	3.1	18.8	57.9	18.3	1.9	7.32	27.797	. .	27.231
	55	Weisse (2) XXI, 1140	. .	3	III–VII	20 40 1.1	57.8	15.1	51.8	16.1	57.5	3.23	33.304	. .	32.720
	56	λ Gruis	. .	3	III–VII	99 0 0.0	56.2	12.7	50.2	12.6	55.3	1.17	34.813	. .	34.251
	57	30 Pegasi	5.5	3	III–VII	53 45 5.9	1.7	20.4	57.4	19.8	4.9	8.35	34.123	. .	33.552
	58	B. A. C. 7861 . .	6.0	3	III–VII	69 10 5.3	1.7	20.3	58.8	20.1	4.6	8.47	35.130	. .	34.562
	59	Nadir	. .	.	. .	200 0 6.9	2.9	21.1	58.3	18.2	5.3	8.78	30.698	. .	. .
	60	Moon S.	. .	3	III–VII	69 45 0.0	58.4	15.5	53.9	14.5	59.4	3.62	32.015	. .	31.447
23	61	52 Cygni	. .	3	III–VII	28 35 1.3	56.2	15.7	52.9	15.3	59.3	3.45	25.703	−0.587	25.110
	62	η Capricorni . . .	. .	3	III–VII	79 14 58.7	55.6	72.9	50.2	72.8	57.4	61.27	34.234	. .	33.651
	63	B. A. C. 7378 . .	. .	3	III–VII	79 35 3.2	58.9	17.8	54.0	16.7	1.4	5.33	33.173	. .	32.590
	64	Weisse (2) XXI, 322	. .	3	III–VII	20 35 1.9	57.3	16.8	52.1	16.2	59.2	3.92	27.334	. .	26.739
	65	B. A. C. 7517 . .	7.0	3	III–VII	74 20 5.5	2.2	20.8	58.1	19.2	3.2	8.17	29.300	−0.587	28.716

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1874.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	− 1 31.7	S. 36 48 36.5	44.3	+ 2 4 18.0	− 13.4	Y.	
2	30.274	53.3	46.2	− 1 12.4	77 48 55.8	4 27.9	− 38 59 44.9	− 1.8	Y.	
3	. .	. .	. .	+ 48.8	51 5 57.5	1 13.3	− 12 13 32.0	− 10.6	Y.	
4	. .	. .	. .	− 1 51.3	51 3 17.5	1 13.3	− 12 10 52.0	− 10.8	Y.	
5	. .	. .	. .	− 1 54.6	33 43 17.7	39.6	+ 5 9 41.5	− 16.1	Y.	
6	30.276	53.0	45.3	− 4 33.5	S. 32 15 37.2	37.5	+ 6 37 24.1	− 16.9	Y.	
7	. .	. .	. .	− 2 1.9	N. 14 41 49.0	15.6	+ 52 35 43.4	− 23.8	Y.	
8	. .	. .	. .	. .		. .		. .	Y.	
9	30.270	52.0	44.0	− 1 47.2	S. 43 3 24.9	55.5	− 4 10 41.6	− 16.9	Y.	
10	. .	. .	. .	− 2 18.7	N. 0 2 13.6	0.0	+ 38 55 52.4	− 23.3	Y.	Excessively blurred.
11	. .	. .	. .	− 1 42.6	S. 37 28 20.8	45.6	+ 1 24 32.4	− 18.9	Y.	
12	. .	. .	. .	− 20.1	17 54 44.3	19.2	+ 20 58 35.3	− 22.1	Y.	
13	30.262	50.8	43.3	+ 23.7	31 5 33.4	35.9	+ 7 47 29.5	− 20.8	Y.	
14	29.774	58.5	55.2	− 1 11.3	65 53 54.1	2 7.2	− 27 2 22.5	− 6.2	Y.	
15	. .	. .	. .	+ 1 56.7	2 51 56.9	2.9	+ 36 1 39.0	− 22.3	Y.	
16	. .	. .	. .	− 1 56.9	19 18 6.9	20.0	+ 19 35 11.9	− 19.9	Y.	
17	. .	. .	. .	− 1 17.6	2 8 43.2	2.1	+ 36 44 53.5	− 22.8	Y.	
18	. .	. .	. .	− 2 10.8	3 12 59.2	3.2	+ 35 40 36.4	− 23.0	Y.	
19	. .	. .	. .	− 1 43.3	S. 43 3 26.9	53.4	− 4 10 41.5	− 16.8	Y.	
20	. .	. .	. .	− 1 57.4	N. 15 16 50.4	15.6	+ 54 10 44.8	− 24.3	Y.	
21	. .	. .	. .	− 2 56.1	S. 1 47 12.2	1.8	+ 37 6 24.8	− 23.5	Y.	
22	29.755	58.2	55.2	+ 2 22.6	N. 24 12 28.7	25.7	+ 63 6 33.2	− 23.8	Y.	
23	. .	. .	. .	+ 29.5	S. 31 5 35.8	34.4	+ 7 47 28.6	− 20.8	Y.	
24	. .	. .	. .	− 3 13.9	2 6 52.5	2.1	+ 36 46 44.2	− 23.4	Y.	
25	. .	. .	. .	− 3 25.1	3 1 46.0	3.0	+ 35 51 49.8	− 23.3	Y.	
26	. .	. .	. .	− 3 3.0	3 2 8.2	3.0	+ 35 51 27.6	− 23.3	Y.	
27	. .	. .	. .	+ 15.4	1 15 24.7	1.3	+ 37 38 12.8	− 23.2	Y.	
28	. .	. .	. .	− 18.8	1 19 45.1	1.3	+ 37 33 52.4	− 23.1	Y.	
29	. .	. .	. .	+ 1 17.4	1 1 25.0	1.0	+ 37 52 12.8	− 22.8	Y.	
30	29.730	58.0	53.8	− 2 51.0	36 57 15.4	43.0	+ 1 55 40.4	− 21.6	Y.	−2″.16 applied to mean of B, C, D, and E.
31	. .	. .	. .	− 3 38.2	63 31 23.4	1 54.5	− 24 39 39.1	− 19.4	Y.	
32	. .	. .	. .	− 2 30.8	38 2 40.2	44.8	+ 0 50 13.8	− 21.9	Y.	
33	. .	. .	. .	. .		. .		. .	Y.	
34	30.214	58.0	53.5	− 3 19.4	0 6 42.9	0.1	+ 38 46 55.8	− 17.2	Y.	
35	. .	. .	. .	− 1 3.3	50 59 3.6	1 11.8	− 12 6 36.6	− 3.2	Y.	
36	. .	. .	. .	− 1 7.4	41 43 55.4	52.0	− 2 51 8.6	− 7.4	Y.	
37	. .	. .	. .	+ 2 31.4	S. 8 37 34.5	8.9	+ 30 15 55.4	− 17.3	Y.	
38	. .	. .	. .	− 2 44.0	N. 1 47 37.7	1.8	+ 40 41 18.3	− 20.0	Y.	
39	30.214	57.5	52.3	− 1 59.9	S. 59 13 5.5	1 37.7	− 20 21 4.4	− 3.1	Y.	
40	. .	. .	. .	− 36.9	54 39 28.3	1 22.2	− 15 47 11.7	− 5.5	Y.	
41	. .	. .	. .	− 46.7	56 14 17.9	1 27.3	− 17 22 6.4	− 5.4	Y.	
42	30.214	56.8	51.2	+ 1 29.0	72 26 31.9	3 2.9	− 33 35 56.0	− 1.7	Y.	
43	. .	. .	. .	− 1 39.6	0 33 27.0	0.6	+ 38 20 11.2	− 22.1	Y.	
44	. .	. .	. .	− 27.5	66 49 38.9	+ 2 16.2	− 27 58 16.3	− 5.0	Y.	
45	30.206	56.0	49.3	+ 9.6	56 5 20.4	−63 28.7	− 16 8 12.9	. .	Y.	
46	. .	. .	. .	. .		. .		. .	Y.	
47	30.330	60.8	59.6	− 57.3	24 4 8.1	+ 25.8	+ 14 49 4.9	− 11.4	Y.	
48	. .	. .	. .	− 1 3.5	50 59 4.3	1 11.3	− 12 6 36.8	− 3.2	Y.	
49	. .	. .	. .	− 1 8.5	41 43 55.1	51.7	− 2 51 8.0	− 7.4	Y.	
50	30.324	60.8	57.5	+ 2 27.5	S. 8 37 34.6	8.8	+ 30 15 55.4	− 17.4	Y.	
51	. .	. .	. .	− 2 47.3	N. 1 47 38.3	1.8	+ 40 41 18.9	− 20.1	Y.	
52	. .	. .	. .	− 2 1.5	S. 59 13 5.4	1 37.3	− 20 21 3.9	− 3.1	Y.	
53	30.332	60.0	55.7	− 47.0	56 14 18.3	1 26.9	− 17 22 6.4	− 5.4	Y.	
54	30.340	59.8	55.1	+ 1 26.7	72 26 34.0	3 2.2	− 33 35 57.4	− 1.7	Y.	
55	. .	. .	. .	− 1 25.4	0 38 37.8	0.7	+ 38 15 0.3	− 22.3	Y.	
56	30.332	59.0	53.8	− 2 13.2	78 57 47.9	4 51.0	− 40 9 0.1	− 1.4	Y.	
57	. .	. .	. .	− 1 51.3	33 43 17.0	39.1	+ 5 9 42.7	− 16.2	Y.	
58	30.340	58.2	51.5	− 2 23.0	49 7 45.5	+ 1 7.8	− 10 15 14.5	− 12.6	Y.	
59	. .	. .	. .	. .		. .		. .	Y.	
60	30.340	57.8	51.2	− 45.3	49 44 18.3	−60 47.4	− 9 49 52.1	. .	Y.	
61	30.310	61.3	58.8	+ 2 33 2	8 37 36.7	+ 8.8	+ 30 15 53.3	− 17.5	Y.	
62	. .	. .	. .	− 1 54.4	59 13 6.8	1 36.8	− 20 21 4.8	− 3.0	Y.	
63	. .	. .	. .	− 1 21.2	59 33 44.1	1 38.2	− 20 41 43.5	− 3.8	Y.	
64	30.322	61.5	58.6	+ 1 42.2	0 36 46.1	0.6	+ 38 16 52.1	− 21.0	Y.	
65	. .	. .	. .	+ 40.2	S. 54 20 48.4	1 20.6	− 15 28 30.2	− 7.1	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1874.															
Oct. 23	1	ι Piscis Australis . .	. .	3	III–VII	92 25 2.0	58.2	14.8	52.8	13.4	58.2	3.23	27.630	−0.587	27.049
	2	Anon. $21^h\ 46^m\ 45^s$.	7.0	3	III–VII	21 5 6.7	3.9	21.8	58.6	23.2	4.8	9.83	34.892	. .	34.298
	3	λ Gruis	. .	3	III–VII	99 0 3.6	0.3	15.2	53.3	16.1	59.4	4.65	34.859	. .	34.280
	4	Anon. $22^h\ 17^m\ 23^s$.	8.3	3	III–VII	22 15 3.2	0.3	19.2	55.6	18.2	2.7	6.53	35.003	. .	34.409
	5	39 Pegasi	. .	3	III–VII	39 20 8.2	4.9	22.2	0.8	23.6	8.0	11.28	34.567	. .	33.977
	6	Lalande 44346 . .	6.5	3	III–VII	20 50 5.1	1.7	18.6	56.9	19.5	3.1	7.48	35.287	. .	34.692
	7	Lacaille 9244. . .	. .	2	VII, IX	92 40 0.0	56.7	13.0	51.8	12.6	57.6	1.95	28.307	. . .	27.740
	8	56 Pegasi	5.0	3	III–VII	34 5 4.5	2.2	19.8	56.9	18.4	4.1	7.65	29.425	. .	28.834
	9	B. A. C. 8094 . .	5.5	3	III–VII	63 5 2.9	1.2	17.4	55.1	16.8	1.9	5.88	33.781	. .	33.195
	10	Lalande 9500. . .	. .	3	III–VII	94 40 5.8	3.3	21.8	58.9	20.6	4.7	9.18	34.642	. . .	34.062
	11	Nadir	. .	.	. .	200 0 3.4	0.3	17.8	56.0	16.3	2.8	6.10	30.632	. .	. .
	12	Lalande 9706. . .	6.0	3	III–VII	88 50 1.3	59.1	15.9	52.0	15.2	0.2	3.95	32.306	. .	31.725
	13	Lalande 65 . . .	7.5	2	VII, IX	20 35 7.7	6.9	26.3	2.1	26.2	7.2	12.73	35.027	. .	34.414
	14	Lalande 330 . . .	7.5	3	III–VII	22 39 58.2	54.2	71.1	47.5	71.3	55.0	59.55	35.576	. .	34.982
	15	Lalande 656 . . .	7.0	3	III–VII	21 15 3.9	1.2	18.7	56.1	19.7	2.1	6.95	30.025	. .	29.431
	16	Lalande 963 . . .	8.3	3	III–VII	22 30 5.2	4.8	23.6	59.1	21.7	4.0	9.73	29.597	. .	29.003
	17	Lalande 1443. . .	5.5	3	III–VII	21 5 8.4	5.1	23.4	0.7	23.2	5.3	11.02	37.856	. .	37.262
	18	Moon S.	. .	3	III–VII	55 10 6.3	3.4	22.1	59.7	21.6	4.6	9.62	32.984	. .	32.396
	19	Polaris	. .	3	I–5	330 15 6.9	4.8	25.2	1.2	23.0	5.1	11.03	28.537	. .	27.944
26	20	52 Cygni	. .	3	III–VII	28 35 1.2	56.7	16.2	53.1	15.5	0.2	3.82	25.796	−0.605	25.185
	21	ν Cygni	5.0	3	III–VII	18 15 5.4	2.9	21.2	57.4	20.8	2.3	8.33	35.939	. .	35.326
	22	Anon. $21^h\ 5^m\ 31^s$.	8.5	3	III–VII	71 20 5.1	1.3	20.6	57.4	18.9	3.8	7.85	34.336	. .	33.733
	23	B. A. C. 7378 . .	7.5	3	III–VII	79 34 58.4	53.9	72.6	48.9	71.2	55.1	60.02	33.017	. .	32.416
	24	19 Aquarii	6.0	3	III–VII	69 10 1.1	58.1	16.8	54.2	15.8	0.2	4.37	31.802	. .	31.199
	25	Lacaille 8863. . .	. .	3	III–VII	84 55 4.1	1.4	21.2	57.9	19.3	4.2	8.02	36.247	. .	35.647
	26	Weisse XXI, 1063 .	8.5	3	III–VII	64 49 59.2	54.9	70.9	49.1	71.2	54.1	59.90	30.981	. .	30.377
	27	λ Gruis	. .	3	III–VII	99 0 5.7	2.0	18.8	57.9	19.2	1.9	7.58	34.939	. .	34.342
	28	Weisse (2) XXII, 349	9.0	3	III–VII	22 14 58.2	55.6	72.2	50.0	71.5	56.2	70.62	27.179	. .	26.567
	29	O. Arg. S. 22224. .	8.8	3	III–VII	87 0 6.2	5.0	22.9	1.0	21.1	6.1	10.38	33.766	. .	33.166
	30	Lacaille 9244. . .	. .	3	IV–VI	92 39 57.1	53.7	69.7	47.9	67.3	52.1	57.97	28.205	. .	27.602
	31	Anon. $22^h\ 51^m\ 2^s$.	8.5	3	V–IX	85 40 3.4	0.2	17.6	57.4	15.4	0.6	5.77	27.504	. .	26.908
	32	Weisse (2) XXIII, 34	. .	3	III–VII	22 45 6.4	5.8	22.0	0.8	21.4	5.2	10.27	35.850	. .	35.238
	33	Weisse (2) XXIII, 35	. .	2	I, IX	" " "	"	"	"	"	"	"	34.239	. .	33.598
	34	Radcliffe 6064 . .	8.3	3	IV–VI	4 25 11.1	8.8	26.7	3.8	27.7	9.3	14.57	33.217	. .	32.608
	35	16 Piscium	. .	3	III–VII	57 30 oblit.	12.4	30.1	8.1	31.2	14.1	18.42	34.245	. .	33.640
	36	Anon. $23^h\ 42^m\ 10^s$.	9.0	3	IV–VI	355 45 7.2	7.2	25.1	1.1	23.2	5.8	11.60	26.175	. .	25.564
	37	Anon. $23^h\ 52^m\ 23^s$.	8.8	3	III–VII	89 5 5.2	3.2	20.8	57.8	17.8	3.6	8.07	34.348	. . .	33.749
	38	Lalande 26 . . .	8.5	3	III–VII	19 49 56.1	55.1	72.8	49.1	70.2	52.1	59.23	31.625	. .	31.012
	39	Lalande 330 . . .	7.0	3	III–VII	22 40 3.8	3.2	20.7	58.8	19.4	3.4	8.22	35.874	. .	35.262
	40	Lalande 767 . . .	8.2	3	III–VII	23 44 56.8	54.8	72.0	50.2	69.4	54.3	59.58	33.656	. .	33.044
	41	Lalande 1281. . .	. .	3	III–VII	23 50 5.7	6.8	23.8	1.8	22.3	4.7	10.85	30.535	. .	29.923
	42	Nadir	. .	.	. .	199 59 56.9	53.2	72.2	50.0	68.2	54.9	59.23	30.429	. .	. .
28	43	η Microscopii . . .	. .	2	III, VII	100 40 0.7	55.2	13.6	50.5	11.2	57.2	1.40	27.940	−0.575	27.378
	44	ι Pegasi	6.0	3	III–VII	35 50 0.0	52.9	12.2	49.0	12.3	56.0	0.40	34.799	. .	34.220
	45	B. A. C. 7517 . .	. .	3	III–VII	74 20 2.6	58.2	16.3	54.0	16.2	59.2	4.42	29.158	. .	28.586
	46	Anon. $21^h\ 47^m\ 2^s$.	8.0	3	III–VII	20 35 0.0	55.2	14.3	50.2	14.7	56.7	1.85	33.680	. .	33.097
	47	ξ Cephei (2d *) . .	. .	3	IV–VI	354 55 0.1	54.8	15.1	49.3	12.7	56.2	1.37	34.850	. .	34.269
	48	32 Ursæ Majoris, S. P. .	. .	3	IV–VI	304 40 5.7	58.4	20.2	55.2	19.5	2.2	6.87	28.833	. .	28.265
	49	Anon. $22^h\ 27^m\ 47^s$.	7.5	3	III–VII	21 25 5.3	2.8	19.8	57.3	20.5	4.3	8.33	31.828	. .	31.246
	50	Lalande 44346 . .	7.0	3	III–VII	20 50 2.2	58.4	14.6	53.0	15.3	59.6	3.85	35.179	. .	34.596
	51	Anon. $22^h\ 51^m\ 3^s$.	8.5	3	IV–VI	85 40 5.1	2.2	20.9	57.9	19.2	3.2	8.08	27.397	. .	26.824
	52	Lacaille 9330. . .	7.5	3	III–VII	" " "	"	"	"	"	"	"	29.286	. .	28.716
	53	Lalande 45588 . .	. .	3	III–VII	21 40 2.0	57.9	15.5	53.1	17.2	0.9	4.43	37.004	. .	36.422
	54	Nadir	. .	.	. .	199 59 55.2	49.7	66.9	44.5	65.8	52.2	55.72	30.288	. .	. .
29	55	ι Pegasi	. .	3	V–IX	35 49 60.7	52.9	68.9	45.4	72.4	58.1	59.73	34.846	−0.705	34.131
	56	B. A. C. 7614 . .	7.0	3	IV–VI	19 55 6.7	1.8	17.8	54.6	20.4	4.9	7.70	28.210	. .	27.503
	57	23 Pegasi	6.0	3	III–VII	30 30 1.8	55.3	12.2	48.9	16.1	1.8	2.68	27.035	. .	26.325
	58	Nadir	. .	.	. .	200 0 8.8	1.2	17.7	56.1	18.4	8.8	8.50	30.830	. .	. .
Nov. 3	59	B. A. C. 7422 . .	. .	3	III–VII	85 0 1.5	59.9	17.5	59.8	15.2	0.1	5.67	35.651	−0.640	35.016
	60	Lacaille 8863. . .	. .	3	III–VII	84 55 1.7	0.1	16.9	59.8	14.5	0.3	5.55	36.325	. .	35.690
	61	Anon. $21^h\ 46^m\ 50^s$.	. .	3	III–VII	95 30 1.7	59.7	15.2	57.6	12.2	58.0	4.07	32.460	. .	31.827
	62	σ^2 Aquarii	6.0	3	III–VII	71 5 6.4	5.6	21.2	4.9	20.1	4.6	10.47	34.265	. .	33.627
	63	30 Pegasi	5.5	3	III–VII	53 45 7.5	7.6	22.2	5.8	19.9	6.2	11.53	34.246	. .	33.605
	64	B. A. C. 7826 . .	. .	3	III–VII	98 34 58.8	56.7	71.4	54.0	69.9	53.9	60.78	30.744	. .	30.112
	65	Anon. $22^h\ 30^m\ 27^s$.	6.8	3	III–VII	22 45 8.3	8.7	23.9	5.9	22.8	6.6	12.70	28.071	−0.640	27.424

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1874.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	30.328	61.2	57.5	+ 1 32.5	S. 72 26 35.7	3 1.2	− 33 35 58.1	− 1.5	Y.	
2	. .	. .	. .	− 2 14.7	1 2 55.1	1.1	+ 37 50 42.6	− 22.4	Y.	
3	30.334	61.0	56.3	− 2 14.2	78 57 50.5	4 49.5	− 40 9 1.2	− 1.2	Y.	
4	. .	. .	. .	− 2 18.2	2 12 48.3	2.2	+ 36 40 48.3	− 23.3	Y.	
5	. .	. .	. .	− 2 4.6	19 18 6.7	20.4	+ 19 35 11.7	− 20.4	Y.	
6	. .	. .	. .	− 2 27.0	0 47 40.4	0.8	+ 38 5 57.6	− 24.0	Y.	
7	30.326	60.0	55.2	+ 1 10.8	72 41 12.8	3 4.7	− 33 50 38.7	− 6.4	Y.	
8	. .	. .	. .	+ 36.5	14 5 44.2	14.6	+ 24 47 40.0	− 22.6	Y.	
9	. .	. .	. .	− 1 40.1	43 3 25.8	54.5	− 4 10 41.5	− 16.7	Y.	
10	30.336	59.5	54.3	− 2 7.3	74 38 1.9	3 29.3	− 35 47 52.4	− 9.6	Y.	
11	. .	. .	. .	. .		. .		. .	Y.	
12	30.340	59.2	54.0	− 54.1	68 49 9.9	2 29.7	− 29 58 0.8	− 13.6	Y.	
13	. .	. .	. .	− 2 18.3	0 32 54.4	0.6	+ 38 20 43.8	− 24.8	Y.	
14	. .	. .	. .	− 2 36.1	2 37 23.4	2.7	+ 36 16 12.7	− 24.5	Y.	
15	. .	. .	. .	+ 17.9	1 15 24.8	1.3	+ 37 38 12.7	− 24.5	Y.	
16	. .	. .	. .	+ 31.3	2 30 41.0	2.6	+ 36 22 55.2	− 24.3	Y.	
17	. .	. .	. .	− 3 47.6	1 1 23.5	+ 1.0	+ 37 52 14.3	− 24.1	Y.	
18	30.334	58.0	51.4	− 1 15.1	S. 35 8 54.5	−51 6.1	+ 4 35 49.6	. .	Y.	
19	30.335	57.0	50.5	+ 1 4.4	N. 49 43 44.5	+ 1 9.4	+ 88 38 32.7	− 19.6	Y.	
20	30.170	62.0	59.0	+ 2 30.9	S. 8 37 34.7	8.7	+ 30 15 55.4	− 17.5	Y.	
21	. .	. .	. .	− 2 46.9	N. 1 47 38.6	1.8	+ 40 41 19.2	− 20.4	Y.	
22	. .	. .	. .	− 1 57.0	S. 51 18 10.8	1 11.8	− 12 25 43.8	− 6.1	Y.	
23	30.172	62.0	57.7	− 1 15.8	59 33 44.3	1 37.9	− 20 41 43.4	− 3.5	Y.	
24	. .	. .	. .	− 37.6	49 9 26.8	1 6.7	− 10 16 54.7	− 7.8	Y.	
25	30.168	61.8	56.3	− 2 57.0	64 52 11.0	2 2.7	− 26 0 34.9	− 3.3	Y.	
26	. .	. .	. .	− 11.8	44 49 48.1	57.6	− 5 57 6.9	− 11.1	Y.	
27	30.160	61.0	54.2	− 2 16.1	78 57 51.5	4 49.1	− 40 9 1.8	− 0.8	Y.	
28	. .	. .	. .	+ 1 47.6	2 16 48.2	2.3	+ 36 36 48.3	− 23.6	Y.	
29	. .	. .	. .	− 1 39.2	66 58 31.2	2 16.1	− 28 7 8.5	− 6.9	Y.	
30	30.152	60.0	52.4	+ 1 15.2	72 41 13.2	3 4.7	− 33 50 39.1	− 6.1	Y.	
31	. .	. .	. .	+ 1 36.9	65 41 42.7	2 8.4	− 26 50 12.3	− 9.0	Y.	
32	. .	. .	. .	− 2 44.2	2 42 26.1	2.8	+ 36 11 9.9	− 24.8	Y.	
33	. .	. .	. .	− 1 52.8	S. 2 43 17.5	2.8	+ 36 10 18.5	− 24.8	Y.	
34	. .	. .	. .	− 1 21.7	N. 15 36 7.2	16.3	+ 54 30 2.3	− 26.6	Y.	
35	30.144	58.5	50.6	− 1 54.1	S. 37 28 24.3	44.8	+ 1 24 29.7	− 18.9	Y.	− 2″.03 applied to mean of B, C, D, and E.
36	. .	. .	. .	+ 2 19.0	N. 24 12 29.4	26.3	+ 63 6 34.5	− 26.5	Y.	
37	. .	. .	50.2	− 1 57.5	S. 69 3 10.6	2 31.6	− 30 12 3.4	− 12.7	Y.	
38	. .	. .	. .	− 31.7	N. 0 10 32.5	0.2	+ 39 4 11.5	− 25.4	Y.	
39	. .	. .	. .	− 2 44.9	S. 2 37 23.3	2.7	+ 36 16 12.8	− 25.1	Y.	
40	. .	. .	. .	− 1 35.4	3 43 24.2	3.8	+ 35 10 10.8	− 24.9	Y.	
41	30.130	57.0	49.0	+ 2.4	3 50 13.3	3.9	+ 35 3 21.6	− 24.7	Y.	
42	. .	. .	. .	. .		. .		. .	Y.	
43	29.974	64.0	62.3	+ 1 22.2	80 41 23.6	5 32.4	− 41 53 17.2	+ 4.7	Y.	
44	. .	. .	. .	− 2 12.2	15 47 48.2	16.1	+ 23 5 34.5	− 18.3	Y.	
45	29.974	64.0	61.0	+ 44.3	54 20 48.7	1 19.2	− 15 28 29.1	− 6.7	Y.	
46	. .	. .	. .	− 1 37.1	S. 0 33 24.8	0.6	+ 38 20 13.4	− 22.9	Y.	
47	. .	. .	. .	− 2 13.8	N. 25 7 12.4	26.7	+ 64 1 17.9	− 26.1	Y.	
48	29.974	63.8	60.7	+ 54.4	N. 75 18 58.7	3 33.8	+ 65 43 48.7	+ 21.0	Y.	
49	. .	. .	. .	− 39.0	S. 1 24 29.3	1.4	+ 37 29 8.1	− 24.3	Y.	
50	. .	. .	. .	− 2 24.0	0 47 39.8	0.8	+ 38 5 58.2	− 24.6	Y.	
51	. .	. .	. .	+ 1 39.5	65 41 47.6	2 5.8	− 26 50 14.6	− 8.8	Y.	
52	29.973	63.0	59.0	+ 40.2	65 40 48.3	2 5.8	− 26 49 15.3	− 8.9	Y.	
53	. .	. .	. .	− 3 21.3	1 36 43.2	1.6	+ 37 16 54.0	− 25.3	Y.	
54	. .	. .	. .	. .		. .		. .	Y.	
55	29.806	69.2	67.0	− 2 9.4	S. 15 47 50.3	15.8	+ 23 5 32.7	− 18.3	Y.	
56	. .	. .	. .	+ 1 18.3	N. 0 3 34.0	0.1	+ 38 57 12.9	− 23.0	Y.	
57	. .	. .	. .	+ 1 55.2	S. 10 31 57.9	10.4	+ 28 21 30.5	− 21.5	Y.	
58	. .	. .	. .	. .		. .		. .	Y.	
59	30.294	50.5	44.8	− 2 37.2	64 57 28.4	2 6.6	− 26 5 56.2	− 1.7	Y.	
60	. .	. .	. .	− 2 58.3	64 52 7.2	2 6.4	− 26 0 34.8	− 2.7	Y.	
61	30.288	48.8	42.8	− 57.2	75 29 6.8	3 46.8	− 36 39 14.8	− 0.2	Y.	
62	. .	. .	. .	− 1 53.7	51 3 16.8	1 13.9	− 12 10 51.9	− 9.7	Y.	
63	. .	. .	. .	− 1 53.0	33 43 18.5	39.9	+ 5 9 40.4	− 16.0	Y.	
64	30.290	48.3	41.2	− 3.5	78 34 57.3	4 48.6	− 39 46 7.1	− 1.8	Y.	
65	. .	. .	. .	+ 1 20.7	S. 2 46 33.4	2.9	+ 36 7 2.5	− 24.7	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES. A.			B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
						°	′	″	″	″	″	″	″	″	r.	r.	r.
1874.																	
Nov. 3	1	Anon. $22^h\ 38^m\ 35^s$.	9.2	3	III–VII	80	20	2.2	4.5	19.1	2.0	16.7	2.1	7.77	24.240	−0.640	23.604
	2	Lalande 44962 (1st *)	. .	1	V	23	15	1.1	0.8	14.9	57.8	13.4	57.9	4.32	34.650	. .	34.010
	3	56 Pegasi	. .	3	III–VII	34	5	2.2	2.9	17.1	1.1	14.5	1.2	6.50	29.496	. .	28.852
	4	γ Sculptoris . . .	5.5	3	III–VII	92	5	7.3	8.4	23.4	5.9	19.1	4.7	11.47	33.764	. .	33.130
	5	ι Andromedæ . . .	. .	3	III–VII	16	20	6.5	7.4	21.1	4.9	18.8	3.8	10.42	32.845	. .	32.196
	6	25 Piscium	6.0	3	III–VII	57	30	1.7	1.1	14.9	59.9	12.4	0.0	5.00	32.418	. .	31.778
	7	ζ Sculptoris . . .	5.5	3	III–VII	89	15	1.9	3.7	15.8	0.0	12.3	0.0	5.62	28.548	. .	27.914
	8	B. A. C. 37 . . .	. .	3	III–VII	94	25	3.8	5.0	19.2	3.1	16.2	2.1	8.23	28.589	. .	27.956
	9	Lalande 508 . . .	. .	3	III–VII	23	5	5.2	7.2	19.7	3.4	16.3	2.9	9.12	28.997	. .	28.350
	10	Lalande 884 . . .	6.5	3	III–VII	21	20	1.6	3.3	16.8	2.1	14.2	0.1	6.35	31.354	. .	30.707
	11	Lalande 1281 . .	. .	3	III–VII	23	50	6.2	7.4	21.8	5.6	19.2	4.0	10.70	30.687	. .	30.040
	12	γ Cassiopeæ . . .	. .	3	IV–VI	358	50	4.9	7.1	24.4	7.9	19.8	3.3	11.23	28.026	. .	27.381
	13	O. Arg. S. 626 . .	7.0	3	III–VII	83	30	3.1	5.3	18.7	4.8	14.5	0.2	7.77	28.328	. .	27.692
	14	Polaris	. .	3	1–5	330	15	4.1	5.4	22.9	5.2	18.1	1.5	9.53	28.659	. .	28.013
	15	Nadir	. .	.	. .	200	0	4.1	5.7	20.1	4.4	14.8	1.9	8.50	30.760	. .	. .
6	16	ι Pegasi	. .	2	VII, IX	35	49	57.9	52.4	69.0	47.8	71.2	56.5	59.13	34.811	−0.666	34.131
	17	γ Gruis	. .	3	III–VII	96	45	5.1	3.2	17.8	56.8	19.5	5.2	7.93	27.047	. .	26.388
	18	O. Arg. S. 21912. .	7.7	3	III–VII	77	20	3.2	58.8	14.3	52.7	16.2	2.7	4.65	33.029	. .	32.366
	19	Weisse (2) XXII, 764	6.5	3	III–VII	22	10	4.5	1.2	18.1	55.8	18.9	5.1	7.27	28.411	. .	27.738
	20	Lacaille 9315 (2d *).	8.0	3	III–VII	85	40	0.3	55.3	11.1	51.3	11.1	58.1	1.20	35.125	. .	34.464
	21	56 Pegasi	5.5	3	III–VII	34	5	5.0	2.6	18.1	57.4	17.9	6.0	7.83	29.581	. .	28.911
	22	γ Sculptoris . . .	. .	3	III–VII	92	5	0.9	57.2	12.8	53.6	11.9	0.4	2.80	33.388	. .	32.728
	23	Anon. $23^h\ 26^m\ 14^s$.	6.0	3	III–VII	24	40	6.4	4.1	20.2	59.4	19.7	5.6	9.23	35.362	. .	34.690
	24	Anon. $23^h\ 46^m\ 22^s$.	7.7	3	III–VII	24	35	4.8	2.2	17.2	57.0	16.8	2.5	6.75	27.232	. .	26.559
	25	Lacaille 9706 . .	. .	3	III–VII	88	50	2.2	0.2	13.8	55.0	14.5	2.4	4.68	32.400	. .	31.740
	26	Lalande 89 . . .	7.0	3	III–VII	21	55	1.7	59.8	14.9	55.1	14.9	2.1	4.75	33.506	. .	32.833
	27	Lalande 409 . . .	8.0	3	III–VII	21	50	4.1	2 9	18.7	58.3	19.8	5.9	8.28	32.156	. .	31.483
	28	Lalande 767 . . .	. .	3	III–VII	23	45	3.2	2.2	17.7	59.1	18.5	4.7	7.57	34.056	. .	33.383
	29	Lalande 1281 . .	. .	3	III–VII	23	50	5.9	3.6	20.8	0.2	20.4	5.5	9.40	30.737	. .	30.064
	30	Lalande 1444 . .	7.5	3	III–VII	20	35	2.7	1.4	17.8	58.7	18.2	2.5	6.88	36.632	. .	35.958
	31	Polaris	. .	3	1–5	330	15	4.3	0.8	21.0	58.8	17.8	2.3	7.50	28.710	. .	28.038
	32	Nadir	. .	.	. .	200	0	4.8	4.0	19.2	0.9	16.8	5.9	8.60	30.790	. .	. .
7	33	B. A. C. 7422 . .	. .	2	III, VII	85	0	5.7	2.5	19.1	59.8	19.2	5.8	8.68	35.702	−0.616	35.094
	34	7 Piscis Australis .	5.5	3	III–VII	92	30	3.3	1.5	14.5	55.4	14.6	2.7	5.33	36.144	. .	35.534
	35	Anon. $21^h\ 43^m\ 30^s$.	9.5	1	V	56	40	4.8	59.7	15.6	55.7	16.2	3.9	5.98	32.339	. .	31.723
	36	B. A. C. 7647 . .	5.5	3	III–VII	97	50	3.9	3.1	16.8	56.8	17.8	3.1	6.92	32.800	. .	32.192
	37	32 Ursæ Majoris, S. P.	. .	3	IV–VI	304	40	3.8	57.8	17.1	54.0	16.1	1.2	5.00	28.722	. .	28.113
	38	Weisse (2) XXII, 349	9.0	3	III–VII	22	14	58.9	56.6	71.1	51.0	70.8	59.1	61.25	27.217	. .	26.594
	39	Anon. $22^h\ 24^m\ 36^s$.	9.2	2	V, IX	52	20	2.8	0.2	14.6	54.9	14.3	2.5	4.88	36.850	. .	35.231
	40	Anon. $22^h\ 33^m\ 55^s$.	8.2	3	III–VII	22	10	4.2	2.2	17.8	58.1	18.8	3.7	7.47	33.351	. .	32.728
	41	Lacaille 9253 . .	6.5	3	III–VII	97	14	57.9	56.7	70.1	49.3	69.2	55.3	59.75	31.366	. .	30.758
	42	Lacaille 9315 (1st *).	8.4	3	III–VII	85	39	58.9	56.8	71.6	53.7	71.2	57.2	61.57	27.383	. .	26.772
	43	Lacaille 9330. . .	7.7	2	I, IX	"	"	"	"	"	"	"	"	"	29.202	. .	28.611
	44	O. Arg. S. 22544. .	8.3	3	III–VII	"	"	"	"	"	"	"	"	"	31.012	. .	30.401
	45	Anon. $23^h\ 4^m\ 21^s$.	10.0	1	V	20	40	0.0	58.2	12.8	54.4	13.2	57.8	2.73	32.676	. .	32.060
	46	Lalande 45704 . .	9.0	1	V	78	5	3.8	4.2	16.3	59.7	17.4	3.9	7.55	29.321	. .	28.705
	47	Anon. $23^h\ 25^m\ 3^s$.	10.0	1	V	43	40	2.0	1.0	13.6	54.9	13.2	0.6	4.22	29.459	. .	28.843
	48	Anon. $23^h\ 46^m\ 25^s$.	7.5	3	IV–VI	24	34	57.4	56.6	68.7	51.3	68.4	53.7	59.35	26.995	. .	26.377
	49	Lacaille 9699 . .	6.5	3	III–VII	97	25	5.5	7.2	20.2	1.9	18.2	5.4	9.73	30.320	. .	29.712
	50	Lacaille 9753 . .	6.5	3	III–VII	94	25	0.0	58.9	12.2	55.1	10.9	59.1	2.70	33.157	. .	32.548
	51	Lalande 220 . . .	. .	1	V	23	5	0.7	0.8	12.9	55.7	12.4	0.0	3.75	29.192	. .	28.576
	52	Lalande 251 . . .	. .	1	V	"	"	"	"	"	"	"	"	"	36.227	. .	35.611
	53	Weisse O, 321 . .	8.5	3	III–VII	63	35	0.3	59.7	12.1	56.8	11.4	0.0	3.38	36.387	. .	35.772
	54	Lalande 884 . . .	. .	3	IV–VI	21	20	5.9	7.2	19.8	2.9	21.3	6.2	10.55	31.535	. .	30.917
	55	Anon. $0^h\ 43^m\ 4^s$.	8.9	.	III–VII	55	49	56.3	55.9	68.1	53.2	68.8	55.1	59.57	30.344	. .	29.727
	56	Anon. $0^h\ 56^m\ 19^s$.	9.0	2	IV, VI	57	20	oblit.	2.5	15.8	1.0	15.8	4.1	10.82	29.734	. .	29.118
	57	Polaris	. .	3	1–5	330	14	58.9	59.4	75.1	54.9	72.4	57.4	63.02	28.493	. .	27.871
	58	B. A. C. 4527, S. P. .	. .	3	IV–VI	318	14	57.3	55.8	68.2	51.2	68.8	54.0	59.22	34.801	. .	34.200
	59	Nadir	. .	.	. . .	200	0	3.2	6.3	18.8	1.8	15.2	3.5	8.13	30.723	. .	. .
12	60	7 Piscis Australis . .	. .	3	III–VII	92	30	4.8	6.1	10.8	14.5	5.4	8.2	8.30	36.200	−0.520	35.686
	61	Weisse XXI, 1063 .	8.5	3	III–VII	64	50	2.0	59.7	5.8	8.3	1.5	4.3	3.60	31.008	. .	30.489
	62	Lacaille 9006 . .	. .	3	III–VII	98	20	1.7	2.4	6.3	8.7	2.8	4.1	4.33	34.497	. .	33.985
	63	O. Arg. S. 21962 .	. .	2	III, VII	85	55	1.9	1.1	6.9	10.1	2.8	4.1	4.48	32.252	. .	31.740
	64	Weisse (2) XXII, 349	9.0	3	III–VII	22	15	6.2	6.2	11.2	14.3	7.1	8.8	8.97	27.217	−0.520	26.690

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1874.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	+ 3 20.4	S. 60 23 28.2	1 45.2	− 21 31 34.6	− 8.9	Y.	
2	. .	. .	. .	− 2 5.7	3 12 58.7	3.4	+ 35 40 36.7	− 25.2	Y.	
3	30.292	47.0	39.3	+ 36.0	14 5 42.5	15.1	+ 24 47 41.2	− 23.4	Y.	
4	. .	. .	. .	− 1 38.1	S. 72 3 33.4	3 3.8	− 33 12 58.4	− 7.6	Y.	
5	. .	. .	. .	− 1 8.8	N. 3 40 58.4	3.9	+ 42 34 41.1	− 27.0	Y.	
6	30.286	45.5	38.0	− 55.7	S. 37 29 9.3	46.2	+ 1 23 43.3	− 19.3	Y.	
7	. .	. .	. .	+ 1 5.4	69 16 11.0	2 38.1	− 30 25 10.3	− 11.5	Y.	
8	30.280	45.0	37.4	+ 1 4.1	74 26 12.3	3 33.6	− 35 36 7.1	− 11.0	Y.	
9	. .	. .	. .	+ 51.7	3 6 0.8	3.3	+ 35 47 34.7	− 26.2	Y.	
10	. .	. .	. .	− 22.2	1 19 44.2	1.4	+ 37 33 53.2	− 26.3	Y.	
11	. .	. .	. .	− 1.2	S. 3 50 9.5	4.1	+ 35 3 25.2	− 25.8	Y.	
12	. .	. .	. .	+ 1 22.1	N. 21 8 26.7	23.4	+ 60 2 28.9	− 26.8	Y.	
13	. .	. .	. .	+ 1 12.4	S. 63 31 20.1	2 0.8	− 24 39 42.1	− 16.6	Y.	
14	30.270	43.8	36.3	+ 1 2.3	N. 49 43 48.2	1 11.3	+ 88 38 38.3	− 23.9	Y.	
15	. .	. .	. .	. .		. .		. .	Y.	
16	30.232	61.0	55.6	− 2 9.4	S. 15 47 50.7	16.4	+ 23 5 31.7	− 18.5	Y.	
17	30.226	60.2	53.3	+ 1 53.2	76 47 1.2	4 3.2	− 37 57 25.6	+ 0.4	Y.	
18	. .	. .	. .	− 1 14.1	57 18 50.6	1 31.0	− 18 26 42.8	− 7.3	Y.	
19	. .	. .	. .	+ 1 10.9	2 11 18.2	2.2	+ 36 42 18.4	− 25.3	Y.	
20	. .	. .	50.0	− 2 19.9	65 37 41.3	2 8.8	− 26 46 11.3	− 7.8	Y.	
21	. .	. .	. .	+ 34.1	14 5 42.0	14.8	+ 24 47 42.0	− 23.6	Y.	
22	30.232	57.0	48.8	− 1 25.5	72 3 37.3	2 59.8	− 33 12 58.3	− 7.3	Y.	
23	. .	. .	. .	− 2 27.0	4 37 42.3	4.8	+ 34 15 51.7	− 26.2	Y.	
24	. .	. .	. .	+ 1 47.8	4 36 54.6	4.8	+ 34 16 39.4	− 26.4	Y.	
25	30.250	55.8	47.4	− 54.5	68 49 10.2	2 31.2	− 29 58 2.6	− 11.4	Y.	
26	. .	. .	. .	− 1 28.8	1 53 36.0	2.0	+ 37 0 0.8	− 26.9	Y.	
27	. .	. .	. .	− 46.5	1 49 21.8	1.9	+ 37 4 15.1	− 26.9	Y.	
28	. .	. .	. .	− 1 46.0	3 43 21.5	3.9	+ 35 10 13.4	− 26.6	Y.	
29	. .	. .	. .	− 2.0	3 50 7.4	4.0	+ 35 3 27.4	− 26.4	Y.	
30	. .	. .	. .	− 3 6.7	S. 0 32 0.2	0.6	+ 38 21 38.0	− 26.6	Y.	
31	30.250	54.0	45.2	+ 1 1.5	N. 49 43 51.0	1 9.8	+ 88 38 39.6	− 25.1	Y.	
32	. .	. .	. .	. .		. .		. .	Y.	
33	30.348	59.0	53.6	− 2 39.7	S. 64 57 29.0	2 4.6	− 26 5 54.8	− 1.5	Y.	
34	. .	. .	. .	− 2 53.4	72 27 11.9	3 3.2	− 33 36 36.3	+ 0.2	Y.	
35	. .	. .	. .	− 54.0	36 39 12.0	43.6	+ 2 13 43.2	− 13.2	Y.	
36	30.340	58.2	51.2	− 1 8.7	S. 77 48 58.2	4 25.7	− 38 59 45.1	+ 0.4	Y.	
37	. .	. .	. .	+ 59.1	N. 75 18 55.9	3 40.7	+ 65 43 44.6	+ 23.3	Y.	
38	. .	. .	. .	+ 1 46.8	S. 2 16 48.0	2.3	+ 36 36 48.5	− 24.6	Y.	
39	. .	. .	. .	− 2 44.0	32 17 20.9	37.2	+ 6 35 40.7	− 17.0	Y.	
40	. .	. .	. .	− 1 25.5	2 8 42.0	2.2	+ 36 44 54.6	− 24.9	Y.	
41	30.330	56.3	48.4	− 23.8	77 14 36.0	4 15.3	− 38 25 12.5	− 3.3	Y.	
42	. .	. .	. .	+ 1 41.2	65 41 42.8	2 10.2	− 26 50 14.2	− 7.7	Y.	
43	. .	. .	. .	+ 43.5	65 40 45.1	2 10.2	− 26 49 16.5	− 7.9	Y.	
44	. .	. .	. .	− 12.6	65 39 49.0	2 10.1	− 26 48 20.3	− 7.9	Y.	
45	. .	. .	. .	− 1 4.6	0 38 58.2	0.7	+ 38 14 39.9	− 26.5	Y.	
46	30.330	55.0	46.7	+ 40.6	58 5 48.1	1 35.0	− 19 13 44.3	− 11.7	Y.	
47	. .	. .	. .	+ 36.3	23 49 40.5	26.0	+ 15 12 32.3	− 22.1	Y.	
48	. .	. .	. .	+ 1 53.6	4 36 52.9	4.8	+ 34 16 41.1	− 26.6	Y.	
49	30.340	53.0	44.3	+ 9.0	77 25 18.8	4 21.2	− 38 36 1.2	− 8.8	Y.	
50	. .	. .	. .	− 1 19.9	74 23 42.8	3 30.4	− 35 33 34.4	− 10.2	Y.	
51	. .	. .	. .	+ 44.6	3 5 48.4	3.2	+ 35 47 47.2	− 26.9	Y.	
52	. .	. .	. .	− 2 55.9	3 2 7.9	3.2	+ 35 51 27.7	− 26.9	Y.	
53	. .	. .	. .	− 3 0.9	43 32 2.5	56.7	− 4 39 20.4	− 19.0	Y.	
54	. .	. .	. .	− 28.7	1 19 41.8	1.4	+ 37 33 55.6	− 27.0	Y.	
55	. .	. .	. .	+ 8.6	35 50 8.1	43.1	+ 3 2 47.6	− 21.3	Y.	
56	. .	. .	. .	+ 27.6	S. 37 20 38.4	45.6	+ 1 32 14.8	− 21.3	Y.	+2″.07 applied to mean of B, C, D, and E.
57	30.330	50.0	42.6	+ 1 6.7	N. 49 43 50.3	1 10.5	+ 88 38 39.6	− 25.5	Y.	
58	. .	. .	42.6	− 2 11.6	N. 61 47 12.4	1 51.0	+ 79 17 17.8	+ 23.4	Y.	
59	. .	. .	. .	. .		. .		. .	Y.	
60	30.226	49.0	42.8	− 2 58.2	S. 72 27 10.1	3 6.3	− 33 36 37.6	+ 0.6	Y.	
61	. .	. .	. .	− 15.3	44 49 48.3	59.2	− 5 57 8.7	− 10.2	Y.	
62	30.232	49.0	42.0	− 2 4.9	78 17 59.4	4 40.9	− 39 29 1.5	+ 0.8	Y.	
63	. .	. .	. .	− 54.5	65 54 10.0	2 12.9	− 27 2 44.1	− 3.9	Y.	
64	. .	. .	. .	+ 1 43.7	S. 2 16 52.7	2.4	+ 36 36 43.7	− 24.7	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No of mic. readings.	Transit Wires.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1874. Nov. 12	1	60 Aquarii	5.5	3	III–VII	61 4 58.0	57.8	62.5	66.5	58.7	61.8	60.88	28.910	−0.520	28.390
	2	O. Arg. S. 22383.	9.0	3	IV–VI	80 20 4.4	5.4	9.2	11.9	4.4	6.8	7.02	23.544	. .	23.025
	3	δ Piscis Australis.	4.5	.	III–VII	92 5 2.6	5.5	7.3	12.1	4.0	5.2	6.12	34.073	. .	33.559
	4	Weisse XXII, 1223.	8.5	3	III–VII	63 50 4.9	5.8	9.4	15.7	5.6	7.4	8.13	34.362	. .	33.843
	5	Lacaille 9437.	7.0	3	III–VII	90 5 3.8	7.3	10.7	14.9	6.2	8.1	8.50	30.448	. .	29.934
	6	Anon. $23^h\ 20^m\ 23^s$	7.5	3	IV–VI	352 40 2.3	3.7	9.8	12.1	2.8	6.0	6.12	30.836	. .	30.309
	7	ι Andromedæ	4.5	3	III–VII	16 20 2.5	4.0	9.3	11.0	2.2	4.4	5.57	32.609	. .	32.080
	8	Anon. $23^h\ 46^m\ 29^s$	8 0	3	III–VII	30 0 1.1	1.8	6.2	11.9	2.8	4.3	4.68	33.459	. .	32.934
	9	Lacaille 9699	. .	.	III–VII	97 25 0.2	2.2	6.5	9.8	1.5	3.0	3.87	30.182	. .	29.670
	10	Lacaille 9753.	6.5	3	III–VII	94 25 4.9	7.7	11.8	16.1	7.2	8.2	9.32	33.371	. .	32.858
	11	Anon. $0^h\ 10^m\ 18^s$	9.0	3	V–IX	21 25 2.5	5.1	8.7	13.3	4.1	6.7	6.73	36.585	. .	36.040
	12	Lalande 508	8.0	3	III–VII	23 5 3.8	4.8	8.8	15.0	4.2	6.7	7.22	28.927	. .	28.400
	13	Weisse O, 425	8.6	3	V–IX	59 59 57.7	58.4	62.8	67.8	58.5	61.7	61.15	28.804	. .	28.283
	14	Anon. $0^h\ 43^m\ 0^s$	8.8	3	III–VII	55 50 3.3	5.5	9.0	15.4	5.2	7.1	7.58	30.140	. .	29.619
	15	φ^3 Ceti	5.5	3	V–IX	70 50 2.8	6.3	8.9	14.9	4.8	7.5	7.53	32.550	. .	32.033
	16	Lalande 2603.	. .	3	V–IX	19 55 7.1	8.0	12.8	18.8	7.8	9.2	10.62	34.420	. .	33.882
	17	Nadir	. .	.	. .	200 0 1.1	2.6	5.4	13.6	59.0	5.8	4.58	30.514	. .	. .
14	18	Anon. $22^h\ 3^m\ 47^s$	8.3	3	III–VII	22 4 59.6	62.2	68.1	67.1	66.8	60.2	64.00	29.960	−0.658	29.295
	19	Lacaille 9091.	7.0	3	III–VII	96 5 0.0	2.4	7.7	9.1	5.2	0.9	4.22	34.690	. .	34.039
	20	Anon. $22^h\ 20^m\ 53^s$	7.5	3	III–VII	98 35 5.8	8.8	14.2	13.9	11.3	6.5	10.68	35.817	. .	35.167
	21	B. A. C. 7826	6.0	2	VII, IX	" " "	"	"	"	"	"	"	31.432	. .	30.800
	22	B. A. C. 7891 (1st *)	6.5	3	III–VII	87 50 5.2	7.0	12.8	14.8	9.4	7.1	9.38	31.296	. .	30.643
	23	Lacaille 9253	. .	3	III–VII	97 15 59.1	1.4	6.3	6.6	3.2	0.1	2.75	31.960	. .	31.310
	24	δ Piscis Australis.	5.5	3	III–VII	92 5 3.2	3.7	10.3	12.2	6.8	2.4	6.43	34.408	. .	33.756
	25	Anon. $22^h\ 58^m\ 37^s$	9.5	3	III–VII	20 40 1.6	3.2	10.6	11.0	6.7	1.8	5.82	32.338	. .	31.672
	26	Lacaille 9437.	. .	3	III–VII	90 4 58.4	59.1	64.8	65.3	60.8	57.8	61.03	30.479	. .	29.827
	27	Anon. $23^h\ 21^m\ 22^s$	8.5	3	IV–VI	4 45 1.7	4.1	9.9	9.4	4.7	1.9	5.28	27.257	. .	26.595
	28	ι Andromedæ	. .	3	III–VII	16 20 4.7	6.2	12.2	11.7	7.7	3.0	7.58	32.852	. .	32.185
	29	Anon. $23^h\ 46^m\ 27^s$	8.0	3	V–IX	30 0 1.2	2.7	8.8	10.2	5.5	2.4	5.13	33.693	. .	33.023
	30	Anon. $23^h\ 54^m\ 35^s$	9.0	2	VII, IX	52 39 58.8	59.1	65.3	67.8	62.4	60.2	62.27	28.398	. .	27.737
	31	Lacaille 9723.	. .	3	V–IX	95 40 0.1	5.2	9.1	10.2	5.8	1.2	5.27	37 218	. .	36.576
	32	B. A. C. 4165, S. P.	. .	3	2–4	327 20 0.1	1.2	7.3	6.8	4.2	59.3	3.15	33.797	. .	33.141
	33	4 Draconis, S. P.	. .	3	IV–VI	308 50 4.0	3.2	11.5	9.9	7.8	3.2	6.60	30.602	. .	29.952
	34	Lalande 1003.	8.0	3	IV–VI	22 50 0.1	4.3	8.5	10.4	4.3	1.8	4.90	36.212	. .	35.552
	35	Anon. $0^h\ 43^m\ 0^s$	8.8	3	III–VII	55 50 3 6	7.0	11.2	15.6	17.9	4.9	10.03	30.372	. .	29.713
	36	2 Ursæ Minoris	. .	3	1–5	333 20 1.1	3.2	10.2	9.2	5.9	0.4	5.00	31.876	. .	31.216
	37	Lalande 2603	. .	3	III–VII	19 55 2.2	6.8	10.8	14.2	6.7	1.4	7.02	34.428	. .	33.762
	38	50 Andromedæ	. .	3	III–VII	18 4 58.8	62.2	66.8	69.7	62.8	58.2	63.08	27.338	. .	26.672
	39	O. Arg. S. 1049	8.5	3	V–IX	85 50 1.7	5.0	9.8	14.3	5.3	1.7	6.30	29.585	. .	28.938
	40	γ Andromedæ (1st *)	. .	2	I, IX	17 10 6.1	10.9	14.8	18.6	10.2	5.3	10.98	31.345	. .	30.644
	41	γ Andromedæ (2d *)	. .	3	III–VII	" " "	"	"	"	"	"	"	31.445	. .	30.778
	42	64 Ceti	5.5	3	III–VII	50 55 1.9	7.3	9.9	13.9	6.7	5.0	7.45	32.975	. .	32.316
	43	Nadir	. .	.	. .	199 59 55.0	58.5	62.8	65.9	56.3	56.3	59.13	30.479	. .	. .
16	44	Lacaille 9006	. .	3	III–VII	98 20 3.9	1.7	9.7	3.1	10.8	2.1	5.22	34.645	−0.636	34.017
	45	Weisse (2) XXII, 349	9.0	3	V–IX	22 15 1.2	1.7	9.8	3.2	9.8	2.5	4.70	27.318	. .	26.666
	46	Anon. $22^h\ 27^m\ 31^s$	9.0	2	VII, IX	86 59 59.0	57.8	67.2	61.0	66.6	60.0	61.93	24.944	. .	24.325
	47	Lacaille 9253.	6.5	3	III–VII	97 15 2.2	2.3	10.7	4.8	9.7	2.0	5.28	31.704	. .	31.076
	48	B. A. C. 8002	6.5	3	III–VII	89 0 3.1	2.8	10.7	4.3	10.2	3.7	5.80	32.330	. .	31.700
	49	Weisse XXII, 1223.	8.5	3	V–IX	63 50 0.8	0.6	7.9	3.8	8.8	1.4	3.88	34.257	. .	33.623
	50	Lacaille 9437.	. .	3	III–VII	90 5 0.8	2.2	9.2	4.3	9.3	2.1	4.65	30.397	. .	29.767
	51	Anon. $23^h\ 26^m\ 19^s$	6.2	3	III–VII	24 40 0.8	59.6	7.1	3.1	6.7	0.1	2.90	35.179	. .	34.537
	52	25 Piscium	6.5	3	III–VII	57 30 3.1	2.9	10.3	5.6	11.1	5.2	6.37	32.528	. .	31.892
	53	ζ Sculptoris	5.0	3	III–VII	89 15 3.0	2.6	9.9	4.9	9.2	3.0	5.43	28.499	. .	27.869
	54	Lalande 17	8.0	3	III–VII	22 10 1.7	2.1	10.7	5.7	10.1	2.5	5.47	36.944	. .	36.301
	55	B. A. C. 4165, S. P.	. .	3	2–4	327 20 4.1	3.6	12.7	5.4	12.2	2.4	6.73	34.006	. .	33.372
	56	4 Draconis, S. P.	. .	3	IV–VI	308 50 4.6	2.8	11.7	4.2	12.1	2.8	6.37	30.662	. .	30.034
	57	Lalande 1003.	8.0	3	V–IX	22 50 4.1	4.2	13.1	6.8	12.2	4.8	7.53	36.188	. .	35.537
	58	γ Cassiopeæ	3.5	3	IV–VI	358 50 2.9	3.4	14.0	7.8	11.5	3.2	7.13	27.994	. .	27.353
	59	34 Ceti	. .	3	III–VII	61 50 0.2	0.7	7.2	1.9	7.0	0.4	2.90	35.175	. .	34.540
	60	Anon. $1^h\ 14^m\ 11^s$	8.5	3	III–VII	52 55 3.6	3.8	12.6	7.2	10.2	3.3	6.78	30.871	. .	30.231
	61	50 Andromedæ	. .	3	III–VII	18 5 2.4	3.8	11.8	5.9	10.6	2.1	6.10	27.368	. .	26.724
	62	107 Piscium	. .	3	V–IX	39 15 4.8	7.4	14.3	9.9	13.9	5.8	9.35	33.616	. .	32.972
	63	Nadir	. .	.	. .	200 0 3.1	5.6	12.8	8.5	10.4	4.1	7.42	30.722	. .	. .
21	64	Anon. $22^h\ 0^m\ 14^s$	8.5	1	V	5 45 5.3	5.7	16.9	11.2	13.3	4.0	9.40	30.778	−0.770	30.008
	65	Lacaille 9091.	7.0	3	III–VII	96 5 3.2	6.8	13.0	9.8	11.7	3.1	7.93	34.610	−0.770	33.847

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1874.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	′		
1	. .	. .	. .	+ 50.5	S. 41 5 51.4	52.3	− 2 13 4.9	− 14.0	Y	
2	30.250	48.5	39.5	+ 3 38.6	60 23 45.6	1 45.3	− 21 31 52.1	− 8.1	Y.	
3	. .	. .	. .	− 1 51.6	72 3 14.6	3 3.6	− 33 12 39.4	− 4.9	Y.	
4	. .	. .	. .	− 2 0.4	43 48 7.7	57.6	− 4 55 26.5	− 14.0	Y.	
5	30.250	47.8	38.1	+ 2.1	S. 70 5 10.6	2 44.7	− 31 14 16.5	− 7.1	Y.	
6	. .	. .	. .	− 9.7	N. 27 20 3.6	31.1	+ 66 14 13.5	− 30.5	Y.	
7	. .	. .	. .	− 1 5.2	N. 3 40 59.6	3.9	+ 42 34 42.3	− 28.2	Y.	
8	. .	. .	. .	− 1 31.9	S. 9 58 32.7	10.6	+ 28 54 55.5	− 25.9	Y.	
9	30.250	46.7	38.0	+ 10.3	77 25 14.2	4 24.0	− 38 35 59.4	− 7.8	Y.	
10	. .	. .	. .	− 1 29.6	74 23 39.8	3 32.6	− 35 33 33.6	− 9.3	Y.	
11	. .	. .	. .	− 3 9.6	1 21 57.2	1.4	+ 37 31 40.2	− 27.7	Y.	
12	. .	. .	. .	+ 50.2	3 5 57.4	3.3	+ 35 47 38.1	− 27.4	Y.	
13	. .	. .	. .	+ 53.8	40 0 55.0	50.7	− 1 8 6.9	− 19.7	Y.	
14	. .	. .	. .	+ 11.9	35 50 19.5	43.7	+ 3 2 35.6	− 21.1	Y.	
15	. .	. .	. .	− 1 3.7	S 50 49 3.8	1 14.2	− 11 56 39.2	− 17.8	Y.	
16	30.264	45.0	35.3	− 2 1.7	N. 0 6 51.0	0.1	+ 39 0 29.9	− 26.7	Y.	
17	. .	. .	. .	. .		. .		. .	Y.	
18	. .	. .	. .	+ 22.1	S. 2 5 26.1	2.2	+ 36 48 10.5	− 21.1	Y.	
19	30.540	42.0	32.0	− 2 6.6	76 2 57.7	4 3.5	− 37 13 22.4	− 0.8	Y.	
20	. .	. .	. .	− 2 41.9	78 32 28.1	4 55.9	− 39 43 45.2	− 0.7	Y.	
21	. .	. .	. .	− 25.1	78 34 45.0	4 56.9	− 39 46 3.1	− 0.7	Y.	
22	30.540	41.5	32.0	− 20.1	67 49 49.2	2 30.1	− 28 58 40.5	− 4.9	Y.	
23	. .	. .	. .	− 41.1	77 14 21.7	4 26.3	− 38 25 9.2	− 2.4	Y.	
24	. .	. .	. .	− 1 57.7	72 3 8.7	3 8.1	− 33 12 38.0	− 4.6	Y.	
25	. .	. .	. .	− 52.4	0 39 13.4	0.7	+ 38 14 24.7	− 26.8	Y.	Faint; other faint stars in field.
26	30.532	40.5	31.0	+ 5.4	S. 70 5 6.4	2 48.8	− 31 14 16.4	− 6.8	Y.	
27	. .	. .	. .	+ 1 46.7	N. 15 13 8.0	16.8	+ 54 7 3.6	− 29.9	Y.	
28	. .	. .	. .	− 1 8.5	N. 3 41 0.9	4.0	+ 42 34 43.7	− 28.4	Y.	
29	. .	. .	. .	− 1 34.7	S. 9 58 30.4	10.9	+ 28 54 57.5	− 26.0	Y.	
30	. .	. .	. .	+ 1 11.0	32 41 13.2	39.6	+ 6 11 46.0	− 20.5	Y.	
31	30.526	39.8	29.8	− 3 26.1	S. 75 36 39.2	3 57.0	− 36 46 57.4	− 8.3	Y.	
32	. .	. .	. .	− 1 38.4	N. 52 41 35.3	1 21.0	+ 88 23 24.9	+ 29.9	Y.	
33	. .	. .	. .	+ 1.5	N. 71 9 51.9	2 59.6	+ 69 53 29.7	+ 27.2	Y.	
34	. .	. .	. .	− 2 54.0	S. 2 47 10.9	3.0	+ 36 6 24.9	− 27.6	Y.	
35	. .	. .	. .	+ 9.0	S. 35 50 19.0	44.7	+ 3 2 35.1	− 21.0	Y.	
36	30.520	38.0	28.7	− 38.1	N. 46 40 33.1	1 5.6	+ 85 35 17.5	− 29.1	Y.	
37	. .	. .	. .	− 1 57.9	0 6 50.9	0.1	+ 39 0 29.8	− 27.0	Y.	
38	. .	. .	. .	+ 1 44.3	N. 1 53 12.6	2.0	+ 40 46 53.4	− 26.8	Y.	
39	. .	. .	. .	+ 33.3	S. 65 50 39.6	2 17.6	− 26 59 18.4	− 16.1	Y.	
40	. .	. .	. .	− 20.2	N. 2 50 9.2	3.1	+ 41 43 51.1	− 25.7	Y.	
41	. .	. .	. .	− 24.4	N. 2 50 13.4	3.1	+ 41 43 55.3	− 25.7	Y.	
42	30.500	35.5	27.2	− 1 12.6	S. 30 53 54.9	37.2	+ 7 59 6.7	− 22.2	Y.	
43	. .	. .	. .	. .		. .		. .	Y.	
44	30.466	50.0	45.7	− 2 5.9	78 17 59.3	4 41.0	− 39 29 1.5	+ 1.0	Y.	
45	. .	. .	. .	+ 1 44.5	2 16 49.2	2.4	+ 36 36 47.2	− 24.8	Y.	
46	30.466	49.0	44.0	+ 2 57.9	67 2 59.8	2 20.6	− 28 11 41.6	− 4.8	Y.	
47	. .	. .	. .	− 33.7	77 14 31.6	4 19.4	− 38 25 12.2	− 2.3	Y.	
48	. .	. .	. .	− 53.3	68 59 12.5	2 35.4	− 30 8 9.1	− 5.7	Y.	
49	. .	. .	. .	− 1 53.6	43 48 10.3	57.6	− 4 55 29.1	− 14.6	Y.	
50	30.466	48.0	41.7	+ 7.3	70 5 12.0	2 44.7	− 31 14 17.9	− 6.6	Y.	
51	. .	. .	. .	− 2 22.2	4 37 40.7	4.9	+ 34 15 53.2	− 26.9	Y.	
52	30.464	46.5	39.9	− 59.3	37 29 7.1	46.3	+ 1 23 45.4	− 18.8	Y.	
53	. .	. .	. .	+ 1 6.8	69 16 12.2	2 38.4	− 30 25 11.8	− 9.6	Y.	
54	. .	. .	. .	− 3 17.5	S. 2 6 48.0	2.2	+ 36 46 48.6	− 28.0	Y.	
55	30.454	45.5	39.0	− 1 45.7	N. 52 41 39.0	1 19.3	+ 88 23 22.9	+ 30.4	Y.	
56	. .	. .	. .	− 1.1	N. 71 9 54.7	2 55.7	+ 69 53 30.8	+ 27.8	Y.	
57	. .	. .	. .	− 2 53.5	S. 2 47 14.0	2.9	+ 36 6 21.9	− 27.8	Y.	
58	30.458	44.5	38.0	+ 1 23.0	N. 21 8 29.9	23.4	+ 66 2 32.1	− 30.0	Y.	
59	. .	. .	. .	− 2 22.3	S. 41 47 40.6	54.2	− 2 54 56.0	− 19.9	Y.	
60	. .	. .	. .	− 7.3	S. 32 54 59.4	39.3	+ 5 58 0.1	− 22.0	Y.	
61	. .	. .	. .	+ 1 42.7	N. 1 53 11.2	2.0	+ 40 46 52.0	− 27.1	Y.	
62	30.466	43.0	36.8	− 1 33.1	S. 19 13 36.2	21.2	+ 19 39 41.4	− 24.3	Y.	
63	. .	. .	. .	. .		. .		. .	Y.	
64	29.976	42.0	35.0	− 0.2	N. 14 14 50.8	15.3	+ 53 8 44.9	− 27.2	Y.	
65	. .	. .	. .	− 2 0.6	S. 76 3 7.4	3 57.7	− 37 13 26.3	− 0.5	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES. A.			B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
1874.						°	′	″	″	″	″	″	″	″	r.	r.	r.
Nov. 21	1	Anon. $22^h\ 20^m\ 58^s$.	7.3	3	IV–VI	98	35	4.1	6.2	12.1	8.8	11.6	2.1	7.48	35.449	−0.770	34.681
	2	B. A. C. 7826 . .	6.0	2	I, IX	"	"	"	"	"	"	"	"	"	31.036	. .	30.306
	3	B. A. C. 7891 (1st *)	7.0	3	III–VII	87	50	0.6	4.1	9.7	7.9	7.7	0.9	5.15	30.071	. .	30.306
	4	Lacaille 9253 . .	. .	3	III–VII	97	14	59.0	61.6	68.5	64.5	65.6	58.1	62.88	31.770	. .	31.008
	5	B. A. C. 8002 . .	6.0	3	III–VII	89	0	4.2	6.9	13.9	9.4	11.8	4.1	8.38	32.559	. .	31.795
	6	Lacaille 9385. . .	. .	3	III–VII	99	30	2.3	5.1	11.1	7.9	8.3	1.0	5.95	28.500	. .	27.738
	7	γ Sculptoris . . .	. .	3	III–VII	92	5	1.8	4.3	11.0	7.9	8.7	0.4	5.68	33.680	. .	32.916
	8	Lacaille 9548. . .	6.5	3	V–IX	82	5	3.5	5.5	12.3	9.0	9.8	1.9	7.00	30.185	. .	29.424
	9	Lalande 46811 . .	7.0	3	III–VII	24	30	0.0	1.8	9.8	6.1	6.4	58.6	3.78	27.150	. .	26.373
	10	Lacaille 9723. . .	. .	3	III–VII	95	35	2.2	7.2	13.8	9.9	10.1	2.0	7.53	27.614	. .	26.851
	11	Lalande 89 . . .	6.5	3	III–VII	21	55	5.2	7.1	16.1	12.5	13.8	4.5	9.87	33.812	. .	33.035
	12	6 Andromedæ . . .	. .	3	V–IX	22	50	3.0	6.2	13.8	9.9	10.5	3.1	7.75	34.993	. .	34.208
	13	B. A. C. 105 . . .	6.0	3	IV–VI	342	34	56.6	57.9	68.0	61.8	63.4	55.0	60.45	31.826	. .	31.049
	14	Lalande 963 . . .	8.5	3	III–VII	22	30	2.7	5.7	12.9	9.8	9.5	2.0	7.10	29.914	. .	29.137
	15	21 Cassiopeæ . . .	. .	2	V, VI	344	35	0.9	1.2	11.2	6.2	7.3	0.0	4.47	29.176	. .	28.398
	16	Lalande 1444 . .	. .	3	IV–VI	20	34	58.1	59.7	68.1	63.5	64.8	55.9	61.68	36.590	. .	35.812
	17	B. A. C. 326 . . .	8.0	3	III–VII	92	19	58.1	61.2	69.7	65.8	64.2	56.2	62.53	31.774	. .	31.010
	18	B. A. C. 385 . . .	7.5	3	III–VII	93	40	1.7	5.8	11.7	9.4	9.7	0.8	6.52	33.019	. .	32.256
	19	δ Cassiopeæ . . .	. .	3	IV–VI	359	20	7.1	9.8	20.8	16.6	15.4	5.2	12.48	33.524	. .	32.749
	20	B. A. C. 466 . . .	5.5	3	III–VII	96	20	3.9	8.1	14.1	12.8	12.8	3.9	9.27	30.822	. .	30.059
	21	Anon. $1^h\ 33^m\ 43^s$.	7.5	3	III–VII	21	15	4.1	7.9	15.0	13.7	12.7	4.2	9.60	30.010	. .	29.235
	22	γ Andromedæ (1st *).	. .	3	III–VII	17	10	2.2	6.3	15.1	10.8	10.3	1.2	7.65	31.330	. .	30.551
	23	γ Andromedæ (2d *).	. .	2	I, IX	"	"	"	"	"	"	"	"	"	31.510	. .	30.697
	24	Moon S.	. .	3	III–VII	44	44	59.0	62.1	69.2	65.4	65.5	58.8	63.33	36.619	. .	35.847
	25	Nadir	. .	.	. .	199	59	57.2	60.3	67.8	66.2	62.8	57.0	61.88	30.680	. .	. .
25	26	Anon. $22^h\ 0^m\ 14^s$.	8.5	2	V, VI	5	45	6.4	9.9	18.6	13.4	16.0	6.4	11.78	30.908	−0.738	30.167
	27	Lacaille 9091. . .	. .	3	III–VII	96	5	2.1	6.8	12.9	9.9	11.2	3.2	7.68	34.559	. .	33.828
	28	Anon. $22^h\ 20^m\ 58^s$.	7.5	2	V, VII	98	35	4.2	7.1	11.5	8.8	10.8	2.1	7.42	35.414	. .	34.682
	29	B. A. C. 7826 . .	6.5	1	II	"	"	"	"	"	"	"	"	"	31.072	. .	30.358
	30	B. A. C. 7891 (1st *)	. .	3	III–VII	87	49	59.6	61.8	67.8	64.4	64.3	59.1	62.83	31.014	. .	30.281
	31	B. A. C. 7944 . .	6.0	3	III–VII	97	45	3.8	6.3	13.9	8.7	10.2	3.2	7.68	36.531	. .	35.801
	32	B. A. C. 7998 . .	5.5	3	III–VII	95	0	1.0	5.2	12.4	10.0	9.8	1.3	6.62	28.130	. .	27.399
	33	Anon. $22^h\ 58^m\ 37^s$.	9.5	3	III–VII	20	39	58.2	60.7	67.4	64.9	65.1	57.0	62.22	31.704	. .	30.958
	34	φ Gruis	. .	3	V–IX	100	20	6.2	9.1	14.2	11.9	10.7	4.4	9.42	34.035	. .	33.316
	35	Rumker 11173 . .	8.3	3	IV–VI	4	29	57.2	60.0	66.2	63.1	62.8	56.2	60.92	33.714	. .	32.972
	36	18 Andromedæ . . .	. .	2	V, VI	9	4	58.4	61.2	67.5	64.9	63.8	56.1	61.98	27.199	. .	26.458
	37	Lacaille 9625 . .	. .	3	III–VII	92	40	5.2	8.9	15.7	12.6	12.3	3.8	9.75	31.597	. .	30.865
	38	Lacaille 9705 . .	6.5	3	III–VII	89	40	4.2	6.5	14.2	9.9	10.5	3.1	8.07	29.074	. .	28.342
	39	Lalande 26 . . .	. .	3	III–VII	19	49	58.5	59.0	67.3	64.1	63.5	54.8	61.20	32.051	. .	31.305
	40	σ Andromedæ. . .	. .	3	V, IX	22	49	59.2	63.3	69.2	67.4	65.8	59.2	64.02	34.860	. .	34.107
	41	6 Draconis, S. P. .	. .	3	IV–VI	309	40	4.8	7.3	15.0	10.6	12.3	3.2	8.87	33.106	. .	32.376
	42	21 Cassiopeæ . . .	. .	3	IV–VI	344	34	57.9	58.2	66.1	63.4	62.8	56.1	60.75	29.118	. .	28.370
	43	Lalande 1504 . .	8.0	2	III, VII	20	24	59.6	63.1	69.7	67.5	66.8	57.3	64.00	32.826	. .	32.076
	44	Anon. $0^h\ 47^m\ 43^s$.	8.5	2	V, IX	"	"	"	"	"	"	"	"	"	32.056	. .	31.299
	45	B. A. C. 326 . . .	7.0	3	III–VII	92	20	2.8	7.0	14.2	11.8	9.2	0.7	7.62	31.883	. .	31.151
	46	B. A. C. 385 . . .	. .	3	III–VII	93	40	4.9	7.9	14.3	12.9	11.9	3.2	9.18	33.048	. .	32.317
	47	δ Cassiopeæ . . .	. .	3	IV–VI	359	20	7.7	11.4	19.4	19.1	14.3	5.6	12.92	33.584	. .	32.841
	48	B. A. C. 466 . . .	6.0	3	III–VII	96	20	2.2	5.8	12.7	9.9	9.7	0.9	6.87	30.667	. .	29.936
	49	107 Piscium . . .	. .	3	III–VII	39	14	57.4	60.2	67.5	64.9	63.3	55.9	61.53	33.483	. .	32.742
	50	α Trianguli. . . .	. .	3	III–VII	29	55	2.4	6.3	12.9	10.8	9.3	2.2	7.32	30.562	. .	29.819
	51	B. A. C. 627 . . .	5.5	3	III–VII	89	30	0.2	4.1	8.9	6.4	5.2	58.3	3.85	36.162	. .	35.430
	52	64 Ceti	. .	3	III–VII	50	55	1.1	5.9	12.1	10.2	9.4	2.0	6.78	33.042	. .	32.303
	53	B. A. C. 723 . . .	6.0	3	III–VII	85	25	3.2	7.5	14.2	14.3	9.7	3.1	8.67	33.422	. .	32.689
	54	Nadir	. .	.	. .	200	0	1.7	5.2	11.8	10.7	7.2	1.3	6.32	30.791	. .	. .
26	55	Anon. $22^h\ 0^m\ 14^s$.	8.5	3	IV–VI	5	45	8.1	9.2	18.1	12.2	16.5	7.9	12.00	30.904	−0.701	30.199
	56	O. Arg. S. 22049. .	8.5	3	III–VII	80	0	0.1	0.8	8.1	2.8	8.2	59.0	3.17	35.049	. .	34.352
	57	O. Arg. S. 22051. .	8.0	1	IX	"	"	"	"	"	"	"	"	"	32.317	. .	31.635
	58	60 Aquarii	. .	3	III–VII	61	5	2.0	2.9	9.1	6.1	9.6	1.7	5.23	29.230	. .	28.529
	59	B. A. C. 7895 . .	6.0	3	III–VII	90	10	4.7	5.1	11.0	8.4	10.8	3.2	7.20	32.370	. .	31.675
	60	B. A. C. 7944 . .	6.0	3	III–VII	97	45	3.2	5.1	11.5	7.0	10.2	2.8	6.63	36.496	. .	35.803
	61	B. A. C. 7998 . .	6.0	3	III–VII	95	0	0.0	2.2	8.2	5.3	9.2	59.2	4.02	28.063	. .	27.360
	62	Lacaille 9385 . .	8.0	3	III–VII	99	30	0.7	2.7	7.3	3.9	6.8	58.7	3.35	28.390	. .	27.697
	63	o Gruis	. .	3	III–VII	100	19	58.3	59.4	64.5	61.0	65.2	56.8	60.87	33.848	. .	33.156
	64	Anon. $23^h\ 16^m\ 12^s$.	8.5	3	IV–VI	352	29	58.8	60.2	68.1	62.5	66.2	56.5	62.05	27.798	. .	27.090
	65	Lacaille 9548 . .	7.0	3	III–VII	82	5	3.9	6.2	13.0	8.2	13.2	3.1	7.93	30.170	−0.701	29.473

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1874.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	− 2 26.7	S. 78 32 40.8	4 49.0	− 39 43 51.0	− 0.4	Y.	
2	29.976	41 5	34.2	− 9.6	78 34 57.9	4 50.1	− 39 46 9.2	− 0.4	Y.	
3	. .	. .	. .	− 9.6	67 49 55.6	2 26.6	− 28 58 43.4	− 4.7	Y.	
4	. .	. .	35.0	− 31.6	77 14 31.3	4 19.7	− 38 25 12.2	− 2.0	Y.	
5	. .	. .	. .	− 56.2	68 59 12 1	2 35.3	− 30 8 8.6	− 5.4	Y.	
6	29.962	41.0	34.1	+ 1 10.9	79 31 16.9	5 15.3	− 40 42 53.4	− 2.7	Y.	
7	. .	. .	. .	− 1 31.4	72 3 34.3	3 3.9	− 33 12 59.4	− 5.6	Y.	
8	. .	. .	. .	+ 18.1	62 5 25.1	1 53.2	− 23 13 39.5	− 10.1	Y.	
9	. .	. .	. .	+ 1 53.7	4 31 57.5	4.8	+ 34 21 36.5	− 27.8	Y.	
10	29.994	40.2	33.1	+ 1 38.7	75 36 46.2	3 51.3	− 36 46 58.7	− 7.4	Y.	
11	. .	. .	. .	− 1 35.1	1 53 34.8	2 0	+ 37 0 2.0	− 28.6	Y.	
12	. .	. .	. .	− 2 11.9	S. 2 47 55.9	3.0	+ 36 5 39.9	− 28.5	Y.	
13	. .	. .	. .	− 32.9	N. 37 25 32.4	46.2	+ 76 19 57.4	− 32.5	Y.	
14	. .	. .	. .	+ 27.0	S. 2 30 34.1	2.7	+ 36 23 2.0	− 28.5	Y.	
15	29.990	39.5	31.0	+ 50.2	N. 35 24 5.3	43.0	+ 74 18 27.1	− 32.1	Y.	
16	. .	. .	. .	− 3 2.1	S. 0 31 59.5	0.6	+ 38 21 38.7	− 28.7	Y.	
17	. .	. .	. .	− 31.7	72 19 30.9	3 7.9	− 33 29 0.0	− 11.7	Y.	
18	30.000	39.0	31.5	− 1 10.7	S. 73 38 55.8	3 23.7	− 34 48 40.7	− 11.8	Y.	
19	. .	. .	. .	− 1 26.1	N. 20 41 13.7	22.9	+ 59 35 15.4	− 30.2	Y.	
20	. .	. .	. .	− 1.8	S. 76 20 7.4	4 4.5	− 37 30 33.1	− 12.0	Y.	
21	. .	. .	. .	+ 24.0	S. 1 15 33.6	1.3	+ 37 38 3.9	− 27.5	Y.	
22	. .	. .	. .	− 17.2	N. 2 50 9.6	3.0	+ 41 43 51.4	− 27.0	Y.	
23	. .	. .	. .	− 21.8	N. 2 50 14.2	+ 3.0	+ 41 43 56.0	− 27.0	Y.	
24	30.014	37.5	30.1	− 3 3.3	S. 24 42 0.1	−41. 31.5	+ 14 53 10.2	. .	Y.	
25	. .	. .	. .	. .	. .	. .	. .	. .	Y.	
26	. .	. .	. .	− 5.2	N. 14 14 53.4	+ 15.2	+ 53 8 47.4	− 27.1	Y.	
27	29.902	38.0	34.0	− 2 0.0	S. 76 3 7.7	3 57.6	− 37 13 26.5	− 0.2	Y.	
28	. .	. .	. .	− 2 26.8	78 32 40.6	4 48.9	− 39 43 50.7	0.0	Y.	
29	. .	. .	. .	− 11.2	78 34 56.2	4 49.8	− 39 46 7.2	0.0	Y.	
30	29.892	38.0	33.1	− 8.8	67 49 54.0	2 26.6	− 28 58 41.8	− 4.2	Y.	
31	. .	. .	. .	− 3 1.8	77 42 5.9	4 29.7	−38 52 56.8	− 1.5	Y.	
32	. .	. .	. .	+ 1 21.5	75 1 28.2	3 41.5	− 36 11 30.9	− 3.0	Y.	
33	. .	. .	. .	− 30.0	0 39 32.2	0.7	+ 38 14 5.9	− 27.3	Y.	
34	29.910	37.8	33.2	− 1 44.0	S. 80 18 24.5	5 39.8	− 41 30 25.5	− 2.5	Y.	
35	. .	. .	. .	− 1 33.1	N. 15 31 32.2	16.7	+ 54 25 27.7	− 31.2	Y.	
36	. .	. .	. .	+ 1 51.0	N. 10 53 7.0	11.6	+ 49 46 57.4	− 30.8	Y.	
37	29.938	37.5	32.6	− 27.1	S. 72 39 42.7	3 11.0	− 33 49 14.9	− 6.9	Y.	
38	. .	. .	. .	+ 52.0	S. 69 41 0.1	2 41.6	− 30 50 2.9	− 8.5	Y.	
39	. .	. .	. .	− 40.9	N. 0 10 39.7	0.2	+ 39 4 18.7	− 29.3	Y.	
40	. .	. .	. .	− 2 8.7	S. 2 47 55.3	3.0	+ 36 5 40.5	− 28.7	Y.	
41	. .	. .	. .	− 1 14.5	N. 70 21 5.6	2 47.7	+ 70 42 27.9	+ 30.7	Y.	
42	29.950	37.5	31.8	+ 51.1	N. 35 24 8.2	42 9	+ 74 18 29.9	− 33.1	Y.	
43	. .	. .	. .	− 1 5.1	S. 0 23 58.9	0.4	+ 38 29 39.5	− 29.1	Y.	
44	. .	. .	. .	− 40.7	0 24 23.3	0.4	+ 38 29 15.1	− 29.1	Y.	
45	29.940	37.0	31.0	− 36.1	72 19 31.6	3 7.7	− 33 29 0.5	− 11.0	Y.	
46	. .	. .	. .	− 1 12.6	S. 73 38 56.6	3 23.7	− 34 48 41.5	− 11.0	Y.	
47	. .	. .	. .	− 1 29.0	N. 20 41 16.1	22.9	+ 59 35 17.8	− 31.1	Y.	
48	. .	. .	. .	+ 2.0	S. 76 20 8.9	4 4.6	− 37 30 34.7	− 11.2	Y.	
49	. .	. .	. .	− 1 26.0	19 13 35.6	21.1	+ 19 39 42.1	− 24.7	Y.	
50	. .	. .	. .	+ 5.7	9 55 13.0	10.6	+ 28 58 15.2	− 26.2	Y.	
51	29.946	36.0	30.0	− 2 50.2	69 27 13.7	2 40.5	− 30 36 15.4	− 13.9	Y.	
52	. .	. .	. .	− 1 12.2	30 53 54.6	36.3	+ 7 59 7.9	− 22.0	Y.	
53	. .	. .	. .	− 1 24.3	S. 65 23 44.4	2 11.8	− 26 32 17.4	− 15.3	Y.	
54	. .	. .	. .	. .	. .	. .	. .	. .	Y.	
55	. .	. .	. .	− 6.2	N. 14 14 54.2	15.4	+ 53 8 48.4	− 27.1	Y.	
56	. .	. .	. .	− 2 16.4	S. 59 57 46.8	1 44.7	− 21 5 52.7	− 5.6	Y.	
57	30.266	42.8	34.1	− 51.2	59 59 11.9	1 44.8	− 21 7 17.9	− 5.6	Y.	
58	. .	. .	. .	+ 46.1	41 5 51.3	53.0	− 2 13 5.5	− 13.3	Y.	
59	. .	. .	. .	− 52.5	70 9 14.7	2 47.0	− 31 18 22.9	− 3.5	Y.	
60	30.272	42.0	33.5	− 3 1.9	77 42 4.8	4 32.7	− 38 52 58.7	− 1.4	Y.	
61	. .	. .	. .	+ 1 22.5	75 1 26.5	3 44.0	− 36 11 31.7	− 3.0	Y.	
62	. .	. .	. .	+ 1 12.2	79 31 15.5	5 19.2	− 40 42 55.9	− 2.2	Y.	
63	. .	. .	. .	− 1 38.9	S. 80 18 22.0	5 44.5	− 41 30 27.7	− 2.4	Y.	
64	30.275	40.3	32.1	+ 1 31.2	N. 27 28 26.8	31.7	+ 66 22 37.3	− 32.5	Y.	
65	. .	. .	. .	+ 16.5	S. 62 5 24.4	1 54.7	− 23 13 40.3	− 9.5	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed	Nadir cor.	Corr'd.
1874.						° ′ ″	″	″	″	″	″	″	r.	r.	r.
Nov. 26	1	Lacaille 9583. . .	. .	3	III–VII	97 29 55.8	60.1	65.1	60.0	64.7	55.9	60.27	31.395	−0.701	30.702
	2	Lacaille 9625. . .	6.5	3	III–VII	92 40 3.5	6.1	12.0	8.5	11.3	2.0	7.23	31.540	. .	30.845
	3	Lacaille 9705. . .	6.5	3	III–VII	89 40 0.2	3.1	8.2	4.8	7.8	58.8	3.82	28.955	. .	28.260
	4	Lacaille 9737. . .	7.0	3	III–VII	94 20 0.2	0.7	7.6	3.9	7.7	59.0	3.18	31.325	. .	30.631
	5	Lalande 202 . . .	8.0	3	III–VII	20 50 2.0	4.7	11.2	8.2	10.4	1.0	6.25	31.709	. .	31.000
	6	B. A. C. 105 . . .	. .	3	IV½–V½	342 35 5.7	6.3	16.0	10.3	13.3	3.9	9.25	32.086	. .	31.382
	7	6 Draconis, S. P. . .	. .	3	IV–VI	309 40 0.1	0.8	8.2	1.0	8.4	57.9	2.73	32.803	. .	32.110
	8	Lalande 1504. . .	. .	2	III, VII	20 25 0.3	2.7	8.2	5.3	8.8	58.2	3.92	32.760	. .	32.047
	9	Anon. $0^h\ 47^m\ 43^s$.	. .	2	V, IX	" " .	"	"	"	"	"	"	32.002	. .	31.282
	10	Weisse O, 973 . .	9.2	3	III–VII	57 15 oblit.	9.1	15.7	13.9	15.9	7.4	11.65	35.961	. .	35.260
	11	34 Ceti	5.5	3	III–VII	61 50 2.2	5.1	9.7	8.3	9.2	3.1	6.27	35.395	. .	34.694
	12	Anon. $1^h\ 14^m\ 11^s$.	8.5	3	III–VII	52 54 56.8	59.8	64.8	63.8	62.8	56.3	60.72	30.754	. .	30.052
	13	B. A. C. 4506, S. P. .	. .	3	IV–VI	311 54 55.6	58.4	65.8	59.7	63.5	52.7	59.28	24.080	. .	23.389
	14	ϵ Sculptoris . . .	5.0	3	III–VII	84 35 5.1	9.2	15.2	13.1	13.8	5.3	10.28	36.289	. .	35.593
	15	B. A. C. 575 . . .	5.0	3	III–VII	18 50 0.2	2.8	9.0	6.7	9.2	58.8	4.45	34.309	. .	33.600
	16	B. A. C. 627 . . .	5.5	3	III–VII	89 29 59.5	62.4	68.1	64.9	66.2	59.2	63.38	36.116	. .	35.421
	17	65 Ceti	. .	3	III–VII	50 55 2.1	4.8	*11.1	9.2	10.3	2.2	6.62	32.986	. .	32.284
	18	Weisse II, 147 . .	5.5	3	III–VII	57 45 oblit.	9.2	15.4	13.9	15.5	7.2	11.11	35.206	. .	34.505
	19	Weisse II, 288 . .	8.3	3	III–VII	64 10 4.7	8.6	14.5	14.1	14.2	5.0	10.18	28.375	. .	27.675
	20	Nadir	. .	.	. .	199 59 57.6	59.2	65.9	63.9	63.2	57.9	61.28	30.593	. .	. .
30	21	Lacaille 7895 . .	6.0	3	III–VII	90 10 2.5	2.9	11.9	7.2	6.7	0.9	5.35	32.433	−0.734	31.705
	22	Rumker 11173 . .	8.5	3	IV–VI	4 30 6.0	8.8	15.9	12.7	12.1	4.9	10.07	33.911	. .	33.173
	23	Nadir	. .	.	. .	200 0 1.2	3.8	10.7	9.8	5.2	1.5	5.37	30.756	. .	. .
Dec. 2	24	Lalande 45078 . .	7.5	3	III–VII	22 4 58.9	55.2	63.8	56.5	66.3	59.9	60.10	30.547	−0.758	29.782
	25	18 Andromedæ . . .	5.0	3	IV–VI	9 5 4.7	3.8	10.8	3.4	12.4	4.1	6.53	27.372	. .	26.610
	26	Lalande 46811 . .	. .	3	III–VII	24 30 3.9	1.8	8.1	1.8	11.2	3.3	5.02	27.201	. .	26.436
	27	B. A. C. 8332 . .	7.0	3	III–VII	89 5 1.8	0.4	7.7	2.1	9.2	3.7	4.15	36.214	. .	35.462
	28	Lalande 201 . . .	. .	3	III–VII	20 35 2.6	0.8	9.0	1.1	10.4	3.9	4.63	32.998	. .	32.232
	29	B. A. C. 105 . . .	. .	3	IV½–V½	342 35 1.9	57.6	8.3	59.4	9.4	2.1	3.12	32.053	. .	31.292
	30	Lalande 975 . . .	. .	3	III–VII	23 0 1.9	0.0	6.9	0.2	9.8	2.4	3.53	22.711	. .	31.946
	31	γ Cassiopeæ . . .	. .	3	IV–VI	358 50 6.9	4.1	14.8	6.4	14.4	6.3	8.82	28.278	. .	27.515
	32	34 Ceti	. .	3	III–VII	61 50 4.7	2.7	10.1	4.8	11.4	5.7	6.57	35.325	. .	34.568
	33	δ Cassiopeæ . . .	. .	3	IV–VI	359 20 6.2	3.8	13.8	6.8	14.1	6.1	8.47	33.495	. .	32.732
	34	50 Andromedæ . . .	. .	3	III–VII	18 10 59.6	57.2	66.2	58.8	68.2	59.2	61.53	37.065	. .	36.299
	35	107 Piscium	. .	3	III–VII	39 15 4.7	4.2	12.1	6.1	15.7	5.9	8.12	33.710	. .	32.949
	36	α Trianguli. . . .	. .	3	III–VII	29 55 6.7	5.7	12.5	7.1	16.8	9.7	9.75	30.666	. .	29.903
	37	58 Andromedæ . . .	5.0	3	III–VII	21 40 2.3	0.7	8.2	1.3	10.8	4.1	4.57	35.594	. .	34.829
	38	Weisse II, 147 . .	6.0	3	III–VII	57 45 oblit.	3.9	11.3	5.9	13.7	7.8	7.81	35.086	. .	34.328
	39	Weisse II, 288 . .	. .	3	III–VII	64 10 0.0	57.7	5.9	2.2	6.8	1.0	2.27	28.051	. .	27.294
	40	σ Ceti	. .	3	III–VII	74 40 4.2	4.4	10.7	6.2	13.8	6.3	7.60	31.131	. .	30.376
	41	Anon. $2^h\ 35^m\ 36^s$.	8.0	3	III–VII	21 15 5.1	2.8	10.9	5.8	13.8	5.9	7.38	30.215	. .	29.450
	42	η Eridani	5.0	3	III–VII	68 14 59.2	58.9	66.2	60.0	66.8	61.9	62.17	28.283	. .	27.527
	43	B. A. C. 951 . . .	6.0	3	III–VII	87 25 6.1	6.6	12.3	7.9	13.4	8.1	9.07	29.960	. .	29.207
	44	B A. C. 1010 . .	. .	2	III, V	68 10 2.0	0.9	9.7	4.2	9.9	5.5	5.37	37.524	. .	36.767
	45	ζ Eridani	. .	2	VII, IX	" " "	"	"	"	"	"	"	31.682	. .	30.929
	46	10 Tauri	. .	3	V–IX	58 54 57.7	56.8	63.9	58.9	65.8	60.9	60.67	35.477	. .	34.719
	47	22 Tauri	7.5	3	III–VII	34 45 3.6	2.4	8.9	3.5	10.7	3.4	5.42	30.832	. .	30.070
	48	B. A. C. 1163 . .	7.0	2	VII, IX	" " "	"	"	"	"	"	"	30.179	. .	29.407
	49	Nadir	. .	.	. .	200 0 0.8	59.8	7.0	2.8	5.7	3.9	3.33	30.714	. .	. .
4	50	B. A. C. 8045 . .	6.0	3	III–VII	98 25 4.2	5.1	11.2	6.2	10.2	2.7	6.60	34.196	−0.733	33.471
	51	φ Gruis	5.0	3	III–VII	100 20 3.8	4.3	10.6	6.8	8.3	4.0	6.30	33.870	. .	33.145
	52	Lacaille 9500. . .	7.0	3	III–VII	94 39 56.7	57.7	65.9	61.9	63.8	57.9	60.65	34.477	. .	33.751
	53	Lacaille 9583. . .	8.0	3	III–VII	97 30 3.5	7.0	12.2	7.9	8.7	3.9	7.20	31.516	. .	30.791
	54	Weisse (2) XXIII, 994	8.5	3	III–VII	22 0 1.8	3.2	10.2	7.1	8.4	2.1	5.47	31.811	. .	31.071
	55	Lacaille 9713 . .	7.0	3	III–VII	95 35 2.8	6.3	12.7	8.0	10.1	4.2	7.35	35.086	. .	34.360
	56	Weisse O, 90 . .	8.5	3	IV–VI	56 9 58.8	59.4	65.8	62.0	65.1	59.9	61.83	28.677	. .	27.944
	57	B. A. C. 4165, S. P. .	. .	3	2–4	327 20 3.1	5.8	13.1	7.9	10.8	3.4	7.35	34.214	. .	33.482
	58	B. A. C. 105 . . .	. .	3	IV½–V½	342 35 1.5	3.0	12.2	6.1	8.6	2.1	5.58	32.024	. .	31.288
	59	B. A. C. 154 . . .	. .	3	IV½–V½	337 5 0.0	59.8	7.2	3.8	4.1	59.1	2.33	28.620	. .	27.882
	60	Lacaille 241 (1st *) .	7.0	3	III–VII	84 20 0.8	4.2	10.8	7.9	7.8	1.0	5.42	32.469	. .	31.741
	61	B. A. C. 355 . . .	7.5	3	III–VII	91 45 0.9	3.9	11.0	8.0	7.8	1.5	5.52	29.758	. .	29.031
	62	B. A. C. 411 . . .	6.0	3	III–VII	96 35 3.4	7.8	13.6	10.0	10.2	4.3	8.22	36.698	. .	35.972
	63	B. A. C. 491 . . .	5.5	3	III–VII	68 55 1.6	6.2	13.6	11.3	9.3	4.2	7.70	30.628	. .	29.897
	64	ϵ Sculptoris . . .	5.0	3	III–VII	84 35 1.8	6.2	12.8	11.0	9.2	4.0	7.50	36.102	. .	35.374
	65	B. A. C. 575 . . .	. .	3	IV–VI	18 50 7.4	11.4	17.2	16.0	13.7	8.0	12.28	34.593	−0.733	33.858

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1874.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	— 22.0	S. 77 29 38.3	4 28.9	— 38 40 28.4	— 4.9	Y.	
2	30.284	40.0	33.0	— 26.5	72 39 40.8	3 12.9	— 33 49 14.9	— 6.7	Y.	
3	. .	. .	. .	+ 54.6	69 40 58.4	2 43.3	— 30 50 2.9	— 8.3	Y.	
4	. .	. .	. .	— 19.8	74 19 43.4	3 34.4	— 35 29 39.0	— 7.1	Y.	
5	. .	. .	. .	— 31.3	S. 0 49 34.9	0 9	+ 38 4 3.0	— 29.2	Y.	
6	30.294	39.8	31.8	— 43.3	N. 37 25 34.1	46.7	+ 76 19 59.6	— 33.5	Y.	
7	. .	. .	. .	— 1 6.1	N. 70 21 3.4	2 49.7	+ 70 42 28.1	+ 31.0	Y.	
8	. .	. .	. .	— 1 4.2	S. 0 23 59.8	0.4	+ 38 29 38.6	— 29.2	Y.	
9	. .	. .	. .	— 40.2	0 24 23.7	0.4	+ 38 29 14.7	— 29.2	Y.	
10	. .	. .	. .	— 2 44.8	37 12 26.8	46.5	+ 1 40 25.5	— 20.4	Y.	—2″.00 applied to mean of B, C, D, E.
11	. .	. .	. .	— 2 27.1	41 47 39.2	54.7	— 2 54 55.1	— 19.2	Y.	
12	. .	. .	. .	— 1.6	S. 32 54 59.1	39.7	+ 5 58 0.0	— 21.7	Y.	
13	30.310	38.0	30.2	+ 3 27.1	N. 68 1 33.6	2 31.0	+ 73 2 16.6	+ 29.6	Y.	
14	. .	. .	. .	— 2 55.3	S. 64 32 15.0	2 8.2	— 25 40 44.4	— 14.2	Y.	
15	. .	. .	. .	— 1 52.8	N. 1 11 48.4	1.3	+ 40 5 28.5	— 27.9	Y.	
16	30.314	37.3	29.6	— 2 49.9	S. 69 27 13.5	2 42.6	— 30 36 17.5	— 13.7	Y.	
17	. .	. .	. .	— 1 11.6	30 53 55.0	36.8	+ 7 59 7.0	— 22.0	Y.	
18	. .	. .	. .	— 2 21.2	37 42 49.9	47.5	+ 1 10 1.4	— 20.6	Y.	—2″.39 applied to mean of B, C, D, E.
19	30.314	37.0	29.0	+ 1 12.9	44 11 23.1	59.7	— 5 18 44.0	— 19.3	Y.	
20	. .	. .	. .	. .		. .		. .	Y.	
21	30.428	37.8	24.0	— 53.4	S. 70 9 11.9	2 51.3	— 31 18 24.4	— 3.2	Y.	
22	30.452	36.0	23.4	— 1 39.4	N. 15 31 29.4	17.4	+ 54 25 25.6	— 31.5	Y.	
23	. .	. .	. .	. .		. .		. .	Y.	
24	30.146	50.2	47.0	+ 6.8	S. 2 5 6.9	2.1	+ 36 48 29.8	— 26.9	Y.	
25	. .	. .	. .	+ 1 46.3	N. 10 53 7.2	11.3	+ 49 46 57.3	— 31.3	Y.	
26	. .	. .	. .	+ 1 51.7	S. 4 31 56.7	4.7	+ 34 21 37.4	— 28.2	Y.	
27	30.134	50.0	46.2	— 2 51.2	69 2 13.0	2 32.8	— 30 11 7.0	— 7.7	Y.	
28	. .	. .	. .	— 1 9.9	S. 0 33 54.7	0.6	+ 38 19 43.5	— 29 6	Y.	
29	30.122	50.0	45.2	— 40.5	N. 37 25 37.4	45.2	+ 76 20 1.4	— 34.8	Y.	
30	. .	. .	. .	— 1 1.0	S. 2 59 2.5	3.1	+ 35 54 33.2	— 29.2	Y.	Faint.
31	30.116	49.5	44.9	+ 1 17.9	N. 21 8 33.3	22.9	+ 60 2 35.0	— 33.2	Y.	
32	. .	. .	. .	— 2 23.1	S. 41 47 43.4	52.8	— 2 54 57.4	— 18.8	Y.	
33	. .	. .	. .	— 1 25.6	N. 20 41 17.2	22.3	+ 59 35 18.3	— 32.4	Y.	
34	. .	. .	. .	— 3 17.4	N. 1 53 15.9	2.0	+ 40 46 56.7	— 29.4	Y.	
35	. .	. .	. .	— 1 32.4	S. 19 13 35.7	20.6	+ 19 39 42.5	— 24.9	Y.	
36	30.096	49.0	43.4	+ 3.0	9 55 12.8	10.4	+ 28 58 15.6	— 26.6	Y.	
37	. .	. .	. .	— 2 31.3	1 37 33.2	1.7	+ 37 16 3.9	— 27.6	Y.	
38	. .	. .	. .	— 2 15.7	37 42 52.2	45.8	+ 1 10 0.8	— 20.1	Y.	—0″.89 applied to mean of B, C, D, E.
39	. .	. .	. .	+ 1 24.8	44 11 27.1	57.6	— 5 18 45.9	— 18.6	Y.	
40	30.086	48.5	42.3	— 11.8	54 39 55.8	1 23.5	— 15 47 40.5	— 16.4	Y.	
41	. .	. .	. .	+ 17.2	1 15 24.6	1.3	+ 37 38 12.9	— 25.8	Y.	
42	. .	. .	. .	+ 1 17.5	48 16 19.7	1 6.5	— 9 23 47.4	— 17.6	Y.	
43	30.086	48.0	42.4	+ 24.8	67 25 33.9	2 21.8	— 28 34 16.9	— 14.3	Y.	
44	. .	. .	. .	— 3 32.1	48 6 33.3	1 6.1	— 9 14 0.6	— 17.4	Y.	
45	. .	. .	. .	— 29.1	48 9 36.3	1 6.2	— 9 17 3.7	— 17.4	Y.	
46	. .	. .	. .	— 2 27.9	38 52 32.8	47.8	+ 0 0 18.2	— 18.2	Y.	
47	. .	. .	. .	— 2.2	14 45 3.2	15.6	+ 24 8 20.0	— 20.2	Y.	
48	30.064	48.0	41.6	+ 18.6	14 45 24.0	15.6	+ 24 7 59.2	— 20.2	Y.	
49	. .	. .	. .	. .		. .		. .	Y.	
50	30.332	44.8	39.3	— 1 48.8	78 23 17.8	4 45.7	— 39 34 24.7	— 2.0	Y.	
51	. .	. .	39.2	— 1 38.6	80 18 27.7	5 40.6	— 41 30 29.5	— 2.0	Y.	
52	30.360	44.2	38.8	— 1 57.6	74 38 3.1	3 36.9	— 35 48 1.2	— 4.3	Y.	
53	. .	. .	. .	— 24.8	77 29 42.4	4 27.1	— 38 40 30.7	— 4.3	Y.	
54	. .	. .	. .	— 33.6	1 59 31.9	2.1	+ 36 54 4.8	— 29.0	Y.	
55	. .	. .	. .	— 2 16.7	75 32 50.7	3 51.9	— 36 43 3.8	— 5.8	Y.	
56	. .	. .	. .	+ 1 4.4	S. 36 11 6.3	44.5	+ 2 41 48.0	— 19.1	Y.	
57	30.374	42.8	36.0	— 1 49.2	N. 52 41 41.8	1 19.5	+ 88 23 19.9	+ 35.1	Y.	
58	. .	. .	. .	— 40.4	37 25 34.8	46.5	+ 76 20 0.1	— 35.2	Y.	
59	30.374	42.5	35.6	+ 1 6.3	N. 42 53 51.3	56.4	+ 81 48 26.5	— 35.3	Y.	
60	. .	. .	. .	— 54.6	S. 64 19 10.9	2 5.9	— 25 27 38.0	— 11.5	Y.	
61	. .	. .	. .	+ 30.4	71 45 35.9	3 2.7	— 32 54 59.8	— 9.9	Y.	
62	. .	. .	. .	— 3 7.2	76 32 1.1	4 10.0	— 37 42 32.3	— 9.0	Y.	
63	30.382	41.0	34.8	+ 3.2	48 55 10.9	1 9.8	— 10 2 41.9	— 17.0	Y.	
64	. .	. .	. .	— 2 48.4	S. 64 32 19.1	2 7.6	— 25 40 47.9	— 13.0	Y.	
65	. .	. .	. .	— 2 0.9	N. 1 11 48.6	1.3	+ 40 5 28.7	— 28.9	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES. A.			B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
1871.						°	′	″	″	″	″	″	″	″	r.	r.	r.
Dec 4	1	53 Andromedæ	5.0	3	III–VII	21	40	3.0	5.7	11.2	10.7	9.2	4.4	7.37	35.622	−0.733	34.882
	2	Anon $2^h\ 10^m\ 52^s$	9.0	3	IV–VI	3	35	3.3	7.5	13.9	11.4	10.6	5.2	8.65	29.997	. .	29.260
	3	B A. C 742	7 0	3	III–VII	89	15	3.4	7.3	12.0	8.8	9.2	4.6	7.55	26.836	. .	26.109
	4	τ Ceti	5.0	3	III–VII	74	40	3.1	8.2	13.9	13.0	10.6	4.9	8.95	31.237	. .	30.503
	5	Anon. $2^h\ 35^m\ 35^s$	8.0	3	III–VII	21	15	3.0	6.5	11.4	11.8	9.8	4.0	7.75	30.167	. .	29.427
	6	Lalande 5181	7.5	3	IV–VI	22	35	6.1	9.3	14.9	13.8	12.4	6.4	10.48	28.769	. .	28.034
	7	47 Arietis	5.0	3	I I–VII	38	45	5.2	9.8	15.5	13.5	12.4	7.2	10.60	34.476	. .	33.739
	8	Weisse (2) III, 209	9.5	2	V, IX	31	59	58.9	61.6	66.7	65.4	63.0	58.2	62.30	28.578	. .	27.834
	9	Anon. $3^h\ 21^m\ 28^s$	9.0	3	III–VII	46	35	2.0	3.9	10.8	8.9	7.3	1.3	5.70	28.354	. .	27.619
	10	Anon. $3^h\ 29^m\ 54^s$	9.5	1	V	67	55	2.8	6.1	12.7	11.8	8.6	4.8	7.80	26.613	. .	25.880
	11	21 Tauri	. .	3	IV–VI	31	45	0.0	2.2	7.3	6.9	3.8	59.5	3.28	33.707	. .	32.973
	12	22 Tauri	. .	2	I, IX	"	"	"	"	"	"	"	"	"	30.730	. .	29.975
	13	Nadir	. .	.	. .	199	59	58.2	60.7	67.3	65.0	62.1	59.1	62.07	30.648	. .	. .
5	14	Lacaille 9547	6.5	3	III–VII	92	15	4.3	4.8	12.1	9.2	9.6	3.7	7.28	28.501	−0.734	27.773
	15	B. A. C. 8296	. .	3	III–VII	37	55	3.2	3.5	11.8	8.4	9.7	3.7	6.72	31.537	. .	30.799
	16	Anon. $23^h\ 52^m\ 17^s$	8.5	3	III–VII	89	5	1.1	3.1	9.6	6.1	7.3	2.2	4.90	34.579	. .	33.851
	17	B. A. C. 8332	. .	2	VII, IX	"	"	"	"	"	"	"	"	"	36.407	. .	35.690
	18	Lacaille 9737	7.0	3	III–VII	94	20	2.2	4.0	10.9	8.0	9.9	3.2	6.37	31.364	. .	30.637
	19	B. A. C. 4165, S. P.	. .	3	2–4	327	20	1.6	1.4	9.1	5.0	6.9	59.0	3.83	34.112	. .	33.379
	20	B. A. C. 105	. .	3	IV½–V½	342	35	1.0	1.7	11.3	6.2	7.7	59.7	4.60	32.027	. .	31.290
	21	B. A. C. 154	. .	3	IV½–V½	337	4	59.4	59.1	67.7	63.2	64.2	58.4	62.00	28.566	. .	27.827
	22	ϕ^3 Ceti	. .	3	III–VII	70	50	5.3	7.2	13.9	12.3	12.2	7.1	9.67	32.719	. .	31.987
	23	B. A. C. 355	7.0	3	III–VII	91	44	57.5	59.7	65.6	63.0	64.1	57.6	61.25	29.617	. .	28.889
	24	B. A. C. 411	5.5	3	III–VII	96	35	3.1	7.3	13.7	10.9	11.8	3.7	8.42	36.663	. .	35.936
	25	B. A. C. 445	8.0	3	III–VII	89	25	2.2	4.7	7.0	8.1	9.8	2.7	5.75	33.712	. .	32.984
	26	B. A. C. 491	5.5	3	III–VII	68	55	0.5	4.8	10.4	8.8	9.2	3.0	6.12	30.565	. .	29.833
	27	ε Sculptoris	5.0	3	III–VII	84	34	59.3	63.1	68.1	67.2	67.9	61.2	64.47	36.074	. .	35.345
	28	Nadir	. .	.	. .	199	59	57.4	57.8	64.7	61.8	61.2	59.2	60.85	30.609	. .	. .
8	29	Lacaille 9547	7.0	3	V–IX	92	15	2.1	2.1	8.2	6.5	6.5	0.9	4.38	28.470	−0.741	27.743
	30	Lacaille 9609	. .	3	V–IX	101	45	2.4	3.2	8.6	5.9	6.8	1.2	4.68	26.974	. .	26.253
	31	Anon. $23^h\ 53^m\ 8^s$	9.0	2	V, IX	52	39	58.8	60.2	67.0	63.7	65.9	60.0	62.60	28.076	. .	27.332
	32	B. A. C. 47	6.0	3	III–VII	57	45	oblit.	6.8	13.0	11.2	13.1	7.1	9.32	33.842	. .	33.101
	33	Lalande 509	8.5	3	III–VII	22	50	5.3	7.5	13.9	11.1	13.2	6.0	9.50	34.193	. .	33.445
	34	Lacaille 131	7.5	3	III–VII	91	50	0.1	2.8	8.2	5.4	5.4	0.2	3.68	32.181	. .	31.446
	35	λ^2 Sculptoris	5.5	3	III–VII	97	55	1.2	4.3	9.3	7.1	7.2	1.1	5.03	29.189	. .	28.456
	36	Lacaille 239	. .	3	III–VII	89	55	1.1	3.7	6.9	6.5	6.5	0.3	4.17	34.095	. .	33.360
	37	Weisse O, 972	9.0	1	V	49	25	0.7	2.5	10.3	8.1	8.9	2.8	5.55	29.916	. .	29.175
	38	δ Cassiopeæ	4.5	3	IV–VI	4	25	7.3	10.2	16.1	12.3	14.2	6.8	11.15	31.780	. .	31.035
	39	B. A. C. 424	7.0	3	III–VII	91	20	0.0	4.7	8.2	6.8	6.8	59.1	4.27	33.643	. .	32.908
	40	50 Andromedæ	. .	3	I I–VII	18	10	0.0	4.2	10.6	8.2	6.4	59.3	4.78	37.152	. .	36.403
	41	B. A. C. 504	. .	3	V–IX	84	30	2.2	5.8	11.2	11.7	8.8	3.2	7.15	28.760	. .	28.029
	42	Anon. $1^h\ 42^m\ 7^s$	. .	3	V–IX	51	49	57.6	60.8	65.2	65.7	64.8	60.4	62.42	32.081	. .	31.337
	43	Lalande 607	6.5	3	III–VII	81	25	1.7	5.4	9.7	9.4	6.2	2.0	5.73	29.000	. .	28.263
	44	Weisse II, 51	8.5	3	III–VII	54	55	6.7	9.8	16.2	15.5	14.4	5.6	11.37	35.062	. .	34.320
	45	B. A. C. 723	6.0	3	III–VII	85	24	59.5	62.8	69.2	69.8	66.2	60.7	64.70	33.215	. .	32.749
	46	Anon. $2^h\ 24^m\ 57^s$	7.5	3	III–VII	19	55	0.8	3.2	8.8	9.2	6.2	0.0	4.70	33.333	. .	32.584
	47	ν Arietis	5.5	3	III–VII	37	29	56.4	59.2	64.2	63.1	61.9	56.9	60.28	34.540	. .	33.795
	48	Lalande 5181	7.3	3	III–VII	22	35	0.2	2.8	7.8	6.7	5.8	59.0	3.72	28.582	. .	27.834
	49	Anon. $2^h\ 52^m\ 22^s$	8.3	3	III–VII	44	10	1.7	6.8	11.4	10.2	8.8	0.9	6.63	28.201	. .	27.457
	50	Anon. $2^h\ 58^m\ 42^s$	8.5	3	III–VII	82	30	2.3	7.2	12.2	11.9	9.4	1.6	7.43	31.584	. .	30.847
	51	τ Arietis	5.0	3	III–VII	38	10	7.5	11.8	19.3	18.2	15.3	8.8	13.48	28.367	. .	27.622
	52	B. A. C. 1073	5.5	3	III–VII	86	35	0.9	5.1	11.2	11 1	7.4	1.6	6.22	27.506	. .	26.770
	53	Anon. $3^h\ 39^m\ 3^s$	7.3	3	III–VII	35	35	3.7	8.7	13.9	13.9	10.4	4.6	9.20	29.523	. .	28.778
	54	A.34 Pleiadum	6.0	3	III–VII	"	"	"	"	"	"	"	"	"	34.031	. .	33.286
	55	Lalande 7391	7.0	3	III–VII	20	10	5.6	8.6	16.0	15.2	12.2	4.6	10.37	33.576	. .	32.827
	56	Weisse IV, 24	8.3	3	III–VII	44	0	1.6	6.2	10.1	9.8	7.8	2.8	6.38	33.718	. .	32.974
	57	Lalande 7994	6.5	3	III–VII	21	10	1.7	6.0	11.8	11.8	9.2	2.1	7.10	27.330	. .	26.582
	58	Nadir	. .	.	. .	200	0	2.0	7.8	12.8	14.1	8.2	4.1	8.17	30.853	. .	. .
15	59	Lalande 9609	. .	3	III–VII	101	44	59.1	63.8	66.6	67.1	65.3	57.2	63.18	27.286	−0.718	26.577
	60	Lacaille 9713	. .	3	III–VII	95	35	2.4	7.8	12.8	10.1	9.2	2.2	7.42	35.284	. .	34.573
	61	Anon. $0^h\ 6^m\ 33^s$	. .	2	VII, IX	56	10	0.6	4.5	10.9	9.9	8.9	1.9	6.12	29.156	. .	28.436
	62	Lalande 409	7.5	3	III–VII	21	50	2.2	6.2	11.9	9 9	9.5	1.9	6.93	32.260	. .	31.535
	63	Anon. $0^h\ 22^m\ 57^s$	9.2	3	III–VII	51	30	2.2	8.4	13.4	11.9	11.2	2.2	8.22	35.445	. .	34.720
	64	Lalande 975	8.0	3	III–VII	23	0	6.5	10.3	12.4	14.8	16.1	3.8	10.65	32.908	. .	32.183
	65	Lacaille 239	. .	3	III–VII	89	55	0.8	6.3	10.2	8.0	6.4	58.9	5.10	34.125	−0.718	33.413

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1874.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	− 2 33.0	S. 1 37 34.4	1.7	+ 37 16 2.7	− 27.9	Y.	
2	. .	. .	. .	+ 23.2	N. 16 24 28.2	18.0	+ 55 18 25.0	− 29.8	Y.	
3	30.394	40.2	33.3	+ 2 1.9	S. 69 17 9.5	2 40.3	− 30 26 11.0	− 12.8	Y.	
4	. .	. .	. .	− 15.9	54 39 53.1	1 26.0	− 15 47 40.3	− 16.1	Y.	
5	. .	. .	. .	+ 17.9	1 15 25.7	1.3	+ 37 38 11.8	− 26.1	Y.	
6	. .	. .	. .	+ 1 1.6	2 36 12.1	2.8	+ 36 17 23.9	− 25.6	Y.	
7	30.390	39.5	32.5	− 1 57.2	18 43 13.4	20.7	+ 20 10 4.7	− 22.7	Y.	
8	. .	. .	. .	+ 1 7.9	15 1 10.2	16.4	+ 23 52 12.2	− 22.3	Y.	
9	. .	. .	. .	+ 1 14.7	26 36 20.4	30.7	+ 12 16 47.7	− 20.1	Y.	
10	. .	. .	. .	+ 2 9.1	47 57 16.9	1 7.8	− 9 4 45.9	− 16.9	Y.	
11	. .	. .	. .	− 1 33.1	14 43 30.2	16.1	+ 24 9 52.5	− 20.4	Y.	
12	. .	. .	. .	+ 0.8	14 45 4.1	16.1	+ 24 8 18.6	− 20.4	Y.	
13	. .	. .	. .	. .		. .		. .	Y.	
14	30.256	43.3	34.2	+ 1 9.8	72 16 17.1	3 7.8	− 33 25 46.1	− 5.5	Y.	
15	. .	. .	. .	− 25.0	17 54 41.7	19.6	+ 20 58 37.5	− 24.4	Y.	
16	. .	. .	. .	− 2 0.7	69 3 4.2	2 37.4	− 30 12 2.8	− 7.4	Y.	
17	30.250	43.0	34.0	− 2 58.3	69 2 6.6	2 37.3	− 30 11 5.1	− 7.5	Y.	
18	. .	. .	. .	− 20.0	S. 74 19 46.4	3 33.6	− 35 29 41.2	− 6.3	Y.	
19	30.256	42.3	33.4	− 1 45.9	N. 52 41 42.1	1 19.7	+ 88 23 19.4	+ 35.3	Y.	
20	. .	. .	. .	− 40.4	37 25 35.8	46.5	+ 76 20 1.1	− 35.4	Y.	
21	. .	. .	. .	+ 1 8.1	N. 42 53 49.9	56.5	+ 81 48 25.2	− 35.5	Y.	
22	. .	. .	. .	− 1 2.3	S. 50 49 7.4	1 14.5	− 11 56 43.1	− 15.5	Y.	
23	30.250	41.3	32.9	+ 34.8	71 45 36.1	3 2.8	− 32 55 0.1	− 9.7	Y.	
24	. .	. .	. .	− 3 6.0	76 32 2.4	4 9.6	− 37 42 33.2	− 8.9	Y.	
25	. .	. .	. .	− 1 33.5	69 23 32.2	2 41.2	− 30 32 34.6	− 11.0	Y.	
26	. .	. .	. .	+ 5.2	48 55 11.3	1 9.8	− 10 2 42.3	− 17.0	Y.	
27	30.244	40.0	31.8	− 2 47.5	64 32 17.0	2 7.5	− 25 40 45.7	− 12.8	Y.	
28	. .	. .	. .	. .		. .		. .	Y.	
29	30.108	43.5	31.0	+ 1 10.7	72 16 15.1	3 8.2	− 33 25 44.4	− 5.2	Y.	
30	. .	. .	. .	+ 1 57.4	81 47 2.1	6 41.3	− 43 0 4.6	− 2.8	Y.	
31	. .	. .	. .	+ 1 23.6	32 41 26.2	39.0	+ 6 11 33.6	− 19.6	Y.	
32	. .	. .	. .	− 1 37.2	37 43 32.1	47.1	+ 1 9 19.6	− 18.5	Y.	- 1″.69 applied to mean of B, C, D, and E.
33	. .	. .	. .	− 1 48.0	2 48 21.5	3.0	+ 36 5 14.3	− 29.4	Y.	
34	30.120	40.5	30.0	− 45.3	71 49 18.4	3 3.8	− 32 58 43.4	− 7.8	Y.	
35	. .	. .	. .	+ 48.4	77 55 53.4	4 38.7	− 39 6 53.3	− 6.5	Y.	
36	30.120	39.7	29.4	− 1 45.3	69 53 18.9	2 45.3	− 31 2 25.4	− 9.2	Y.	
37	. .	. .	. .	+ 25.8	S. 29 25 31.4	34.4	+ 9 27 33.0	− 22.2	Y.	
38	. .	. .	. .	− 32.4	N. 15 35 21.3	17.0	+ 54 29 17.1	− 33.2	Y.	
39	. .	. .	. .	− 1 31.1	S. 71 18 33.2	2 58.9	− 32 27 53.3	− 9.9	Y.	
40	. .	. .	. .	− 3 20.7	N. 1 53 15.9	2.0	+ 40 46 56.7	− 30.1	Y.	
41	30.114	38.0	28.4	+ 1 1.8	S. 64 31 8.9	2 7.7	− 25 39 37.8	− 12.2	Y.	
42	. .	. .	. .	− 41.9	31 49 20.5	38.0	+ 7 3 40.3	− 21.5	Y.	
43	. .	. .	28.3	+ 54.5	61 26 0.2	1 51.9	− 22 34 13.3	− 13.6	Y.	
44	. .	. .	. .	− 2 15.4	34 52 56.0	42.6	+ 4 0 0.2	− 20.6	Y.	
45	30.106	36.8	28.4	− 1 17.7	S. 65 23 47.0	2 12.8	− 26 32 21.0	− 12.9	Y.	
46	. .	. .	. .	− 1 21.0	N. 0 6 16.3	0.1	+ 38 59 55.2	− 27.5	Y.	
47	. .	. .	. .	− 1 58.9	S. 17 28 1.3	19.2	+ 21 25 18.3	− 23.9	Y.	
48	. .	. .	. .	+ 1 7.9	2 36 11.6	2.8	+ 36 17 24.4	− 26.0	Y.	
49	. .	. .	. .	+ 1 19.7	24 11 26.4	27.5	+ 14 41 44.9	− 21.7	Y.	
50	30.094	36.5	28.2	− 26.5	62 29 40.9	1 57.0	− 23 37 59.1	− 14.1	Y.	
51	. .	. .	. .	+ 1 14.5	18 11 28.0	20.1	+ 20 41 50.7	− 21.7	Y.	
52	. .	. .	. .	+ 1 41.3	66 36 47.5	2 20.6	− 27 45 29.3	− 13.5	Y.	
53	. .	. .	. .	+ 38.3	15 35 47.5	17.1	+ 23 17 34.2	− 20.5	Y.	
54	. .	. .	. .	− 1 43.0	15 33 26.2	17.0	+ 23 19 55.6	− 20.3	Y.	
55	. .	. .	. .	− 1 28.6	0 8 41.8	0.2	+ 38 44 56.8	− 20.7	Y.	
56	. .	. .	. .	− 1 33.2	23 58 33.2	27.2	+ 14 54 38.4	− 18.0	Y.	
57	30.092	35.8	27.1	+ 1 47.1	1 11 54.2	1.3	+ 37 41 43.3	− 19.0	Y.	
58	. .	. .	. .	. .		. .		. .	Y.	
59	30.440	34.0	25.2	+ 1 47.3	81 46 50.5	6 50.9	− 43 0 2.6	− 2.5	Y.	
60	. .	. .	. .	− 2 23.3	75 32 44.1	3 57.7	− 36 43 3.0	− 4.8	Y.	
61	. .	. .	25.2	+ 49.0	36 10 55.2	45.5	+ 2 41 58.1	− 18.4	Y.	
62	. .	. .	. .	− 48.1	1 49 18.8	2.0	+ 37 4 18.0	− 29.7	Y.	
63	. .	. .	. .	− 2 28.1	31 27 40.1	38.1	+ 7 25 20.6	− 20.5	Y.	
64	. .	. .	. .	− 1 8.4	2 59 2.2	3.2	+ 35 54 33.4	− 29.6	Y.	
65	30.430	33.0	24.7	− 1 47.0	S. 69 53 18.1	2 48.8	− 31 2 28.1	− 8.3	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES. A.			B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed	Nadir cor.	Corr'd.
1874.						°	′	″	″	″	″	″	″	″	r.	r.	r.
Dec. 15	1	Weisse O, 972	9.0	2	III, VII	49	25	4.7	10.2	15.8	13.8	13.8	5.9	10.70	30.015	−0.718	29.294
	2	δ Cassiopeæ	. .	3	IV-VI	4	25	1.2	6.2	11.0	9.1	7.5	0.2	5.87	31.570	. .	30.818
	3	B. A. C. 424	6.0	3	III-VII	91	20	3.5	10.2	14.6	13.8	10.5	2.9	9.25	33.885	. .	33.173
	4	B. A. C. 504	. .	3	III-VII	84	30	0.1	7.1	11.1	11.2	7.7	0.2	6.23	28 797	. .	28.084
	5	Anon. $1^h\ 42^m\ 2^s$	9.5	1	V	51	50	2.0	7.9	12.9	14.1	9.7	3.1	8.28	29.972	. .	29.254
	6	Lacaille 607	. .	3	III-VII	81	25	2.8	10.4	13.9	14.4	9.5	2.5	8.92	29.181	. .	28.467
	7	Anon. $2^h\ 2^m\ 20^s$	9.0	3	III-VII	19	50	0.0	5.9	11.8	10.2	7.8	58.0	5.62	30.097	. .	29.371
	8	Nadir	. .	.	. .	199	59	57.7	63.8	66.4	68.0	62.8	58.8	62.92	30.559	. .	. .
	9	Lalande 5115	8.3	3	III-VII	19	55	2.8	8.2	13.1	12.3	10.3	0.9	7.93	31.635	. .	30.909
	10	B. A. C. 951	6.0	3	IV-VI	87	25	2.2	9.1	12.2	13.8	10.8	3.0	8.52	30.128	. .	29.412
	11	ζ Eridani	. .	3	III-VII	68	10	1.1	6.4	12.1	11.0	8.1	1.6	6.72	31.797	. .	31.081
	12	τ^1 Arietis	5.0	3	III-VII	38	10	5.1	12.0	18.0	16.5	13.7	6.8	12.02	28.300	. .	27.578
	13	Weisse III, 569	6.5	3	III-VII	45	25	1.9	7.8	11.8	12.1	9.2	1.3	7.35	33.058	. .	32.338
	14	Anon. $3^h\ 39^m\ 59^s$	8.0	3	III-VII	47	35	0.5	4.7	8.8	8.8	5.8	0.0	4.77	29.019	. .	28.299
	15	Lalande 7391	. .	3	III-VII	20	10	2.1	8.1	12.8	13.8	9.4	0.9	7.85	33.399	. .	32.673
	16	B. A. C. 1273	5.0	3	III-VII	86	50	5.2	11.9	16.1	17.4	11.8	4.7	11.18	29.301	. .	28.588
	17	Anon. $4^h\ 8^m\ 23^s$	7.5	3	III-VII	90	30	3.9	11.2	14.1	14.8	10.2	2.4	9.43	32.063	. .	31.351
	18	56 Persei	5.0	3	III-VII	25	15	3.7	11.7	14.7	15.8	9.7	2.5	9.68	34.409	. .	33.685
	19	B. A. C. 1408	5.5	3	III-VII	30	10	0.8	9.2	10.9	13.1	8.1	1.4	7.25	28.140	. .	27.417
18	20	Lacaille 9554	7.0	3	IV-VI	97	25	0.8	2.2	8.2	2.8	7.3	0.7	3.67	34.409	−0.717	33.694
	21	Lacaille 9609	7.5	3	III-VII	101	44	59.7	61.2	65.4	62.0	66.2	59.4	62.32	26.753	. .	26.045
	22	Lacaille 9663	7.0	3	III-VII	92	45	1.0	3.7	8.6	4.1	8.8	1.5	4.62	33.032	. .	32.321
	23	86 Pegasi	6.0	3	V-IX	46	10	1.1	2.1	9.0	4.2	9.5	1.8	4.62	28.742	. .	28.020
	24	Lalande 201	. .	3	V-IX	20	35	1.1	1.2	7.7	2.9	7.7	0.3	3.48	32.894	. .	32.160
	25	B. A. C. 4193, S. P.	. .	3	I-5	323	0	4.8	4.9	14.1	7.2	12.9	4.7	8.10	26.792	. .	26.076
	26	6 Draconis, S. P.	. .	3	V, V½, VI	309	39	59.6	59.7	66.8	58.8	66.7	58.3	61.65	33.022	. .	32.314
	27	λ^2 Sculptoris	5.5	3	III-VII	97	54	55.2	56.3	62.4	57.1	61.7	54.8	57.92	28.765	. .	28.061
	28	Anon. $0^h\ 56^m\ 52^s$	9.2	3	III-VII	83	35	0.2	1.3	8.8	3.8	7.2	0.8	3.68	25.282	. .	24.569
	29	B. A. C. 366	6.5	3	III-VII	94	40	0.2	1.9	9.0	4.2	8.2	1.5	4.17	26.202	. .	25.492
	30	Anon. $1^h\ 17^m\ 15^s$	8.2	3	III-VII	20	30	2.7	4.3	10.9	6.0	9.5	2.4	5 97	33.068	. .	32.343
	31	Anon. $1^h\ 17^m\ 19^s$	7.7	2	I, IX	"	"	"	"	"	"	"	"	"	28.818	. .	28.062
	32	τ Andromedæ	. .	3	III-VII	18	55	1.1	2.8	8.7	4.4	7.8	0.0	4.13	27.221	. .	26.496
	33	O. Arg. S. 1056	8.0	3	III-VII	85	50	0.2	2.2	8.8	5.8	8.2	59.4	4.10	35.367	. .	34.655
	34	Moon S.	. .	3	III-VII	47	35	0.4	59.2	6.5	1.8	5.9	0.3	2.35	31.065	. .	30.346
	35	Anon. $2^h\ 2^m\ 26^s$	9.0	3	III-VII	19	50	3.8	6.3	14.8	9.8	12.8	3.6	8.52	30.748	. .	30.023
	36	B. A. C. 742	6.5	3	III-VII	89	15	9.0	2.4	6.8	2.8	6.3	0.1	3.07	26.470	. .	25.759
	37	Anon. $2^h\ 24^m\ 56^s$	7.7	3	III-VII	19	55	5.9	8.3	14.7	9.7	13.6	5.2	9.57	33.525	. .	32.800
	38	ν Arietis	5.5	3	III-VII	37	29	57.3	57.7	62.8	59.9	63.3	56.0	59.50	34.499	. .	33.778
	39	Lalande 5115	8.5	3	III-VII	19	55	4.4	6.8	12.9	9.9	11.7	3.8	8.25	31.515	. .	30.790
	40	Anon. $2^h\ 52^m\ 21^s$	8.3	3	III-VII	44	10	2.9	5.5	10.7	7.8	10.4	2.9	6.70	28.256	. .	27.536
	41	Weisse (2) III, 209	9.0	3	III-VII	35	0	0.0	2.1	7.1	2.7	5.5	59.2	2.77	28.323	. .	27.602
	42	Anon. $3^h\ 21^m\ 29^s$	8.8	3	III-VII	46	35	0.3	0.0	7.8	3.1	6.3	59.8	2.88	28.230	. .	27.511
	43	Weisse III, 569	6.0	3	III-VII	45	24	59.2	62.2	67.8	63.2	65.8	58.0	62.70	32.830	. .	32.111
	44	Anon. $3^h\ 39^m\ 58^s$	8.0	3	III-VII	47	35	2.6	3.7	9.9	6.5	9.9	2.3	5.82	28.976	. .	28.257
	45	Anon. $3^h\ 57^m\ 58^s$	8.0	3	III-VII	37	9	58.0	60.8	66.2	62.3	64.8	58.0	61.68	30.346	. .	29.625
	46	Anon. $4^h\ 6^m\ 19^s$	8.7	3	III-VII	14	25	5.3	7.9	13.9	9.4	12.4	4.9	8.97	29.501	. .	28.775
	47	56 Tauri	5.5	3	III-VII	25	15	3.9	6.8	13.2	9.8	10.9	3.3	7.98	34.389	. .	33.666
	48	Anon. $4^h\ 24^m\ 21^s$	9.5	2	V, IX	23	15	2.2	6.4	11.5	8.0	11.1	3.1	7.05	33.520	. .	32.785
	49	Weisse IV, 727	8.0	3	III-VII	56	35	0.8	2.7	8.4	6.6	8.8	2.4	4.95	26.864	. .	26.147
	50	Anon. $4^h\ 47^m\ 5^s$	8.6	3	III-VII	15	5	0.7	3.2	8.9	5.0	6.7	58.9	3.90	25.354	. .	24.628
	51	Nadir	. .	.	. .	200	0	2.8	5.3	11.4	7.9	8.3	3.2	6.48	30.776	. .	. .
19	52	Lacaille 9663	. .	3	III-VII	92	45	4.1	4.3	10.2	4.9	10.3	4.6	6.40	33.104	−0.728	32.382
	53	86 Pegasi	5.5	3	III-VII	46	10	6.5	5.4	12.8	5.7	13.6	5.9	8.32	28.914	. .	28.184
	54	Lalande 231	8.5	3	III-VII	19	50	3.4	4.2	12.5	5.1	12.6	3.8	6.93	36.476	. .	35.740
	55	Lalande 509	8.5	3	III-VII	22	49	56.0	56.8	64.4	56.5	63.9	57.2	59.13	33.870	. .	33.135
	56	4 Draconis, S. P.	. .	3	IV-VI	308	49	57.0	55.3	62.8	55.8	63.2	56.2	58.38	30.831	. .	30.111
	57	Anon. $0^h\ 35^m\ 30^s$	8.2	3	III-VII	57	45	oblit.	10.2	18.1	13.4	20.2	12.9	14.09	28.972	. .	28.244
	58	B. A. C. 239	5.0	3	IV-VI	358	24	57.7	58.1	66.7	60.8	64.8	55.8	60.65	25.989	. .	25.256
	59	B. A. C. 366	. .	3	III-VII	94	40	3.4	4.2	11.2	6.5	11.5	4.0	6.80	26.379	. .	25.658
	60	ρ Piscium	5.0	3	III-VII	40	20	5.2	7.8	13.8	9.8	13.3	7.7	9.60	27.374	. .	26.643
	61	τ Andromedæ	5.0	3	III-VII	18	55	4.3	4.4	11.0	6.9	10.7	3.3	6.77	27.347	. .	26.611
	62	O. Arg. S. 1056	. .	3	III-VII	85	50	1.8	3.2	9.9	6.7	9.8	2.1	5.58	35.427	. .	34.704
	63	B. A. C. 607	6.0	3	III-VII	38	25	0.2	0.8	7.6	2.8	7 6	1.1	3.35	28.608	. .	27.876
	64	58 Andromedæ	5.0	3	V-IX	21	40	5.7	7.8	13.8	9.8	14.2	7.2	9.75	35.802	−0.728	35.058

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1874.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	+ 22.1	S. 29 25 32.8	35.1	+ 9 27 30.9	— 21.8	Y.	
2	. .	. .	. .	— 26.6	N. 15 35 20.7	17.4	+ 54 29 16.9	— 33.8	Y.	
3	30.440	32.0	24.0	— 1 39.4	S. 71 18 29.8	3 2.7	— 32 27 53.7	— 8.8	Y.	
4	. .	. .	. .	+ 1 0.1	64 31 6.3	2 10.4	— 25 39 37.9	— 11.1	Y.	
5	. .	. .	. .	+ 23.4	31 50 31.6	38.8	+ 7 2 28.4	— 21.1	Y.	
6	30.438	32.0	23.2	+ 48.0	S. 61 25 57.0	1 54.4	— 22 34 12.6	— 12.4	Y.	
7	. .	. .	. .	+ 19.7	N. 0 9 34.7	0.2	+ 39 3 13.7	— 29.1	Y.	
8	. .	. .	. .	. .		. .		. .	Y.	
9	. .	. .	. .	— 28.5	N. 0 5 20.5	0.1	+ 38 58 59.4	— 27.2	Y.	
10	30.460	32.5	23.1	+ 18.4	S. 67 25 27.0	2 29.6	— 28 34 17.8	— 11.6	Y.	
11	. .	. .	. .	— 33.9	48 9 32.8	1 9.8	— 9 17 3.8	— 15.6	Y.	
12	. .	. .	. .	+ 1 15.9	18 11 28.0	20.6	+ 20 41 50.2	— 21.7	Y.	
13	. .	. .	. .	— 1 13.3	25 23 54.1	29.7	+ 13 29 15.0	— 19.3	Y.	
14	. .	. .	. .	+ 53.3	27 35 58.1	32.8	+ 11 17 7.9	— 18.6	Y.	
15	30.460	30.8	22.0	— 1 23.8	0 8 44.1	0.2	+ 38 44 54.5	— 21.4	Y.	
16	. .	. .	. .	+ 44.2	66 50 55.4	2 25.8	— 27 59 42.4	— 11.7	Y.	
17	. .	. .	. .	— 42.3	70 29 27.1	2 55.6	— 31 38 43.9	— 11.1	Y.	
18	. .	. .	. .	— 1 55.5	5 13 14.2	5.8	+ 33 40 18.8	— 18.8	Y.	
19	30.468	30.0	21.9	+ 1 21.0	10 11 28.2	11.3	+ 28 41 59.3	— 17.3	Y.	
20	29.995	42.7	34.5	— 1 55.8	77 23 7.9	4 23.0	— 38 33 52.1	— 3.3	Y.	
21	. .	. .	. .	+ 2 3 9	81 47 6.3	6 37.0	— 43 0 4.5	— 2.5	Y.	
22	29.990	42.2	34.1	— 1 12.8	72 43 51.9	3 11.4	— 33 53 24.5	— 5.3	Y.	
23	. .	. .	. .	+ 1 1.9	26 11 6.6	29.6	+ 12 42 2.6	— 21.6	Y.	
24	. .	. .	. .	— 1 7.7	S. 0 33 55.8	0.6	+ 38 19 42.4	— 30.0	Y.	
25	29.982	41.8	34.1	+ 2 3.0	N. 56 57 48.9	1 32.3	+ 84 7 0.0	+ 37.4	Y.	
26	. .	. .	. .	— 1 12.5	N. 70 21 10.9	2 47.1	+ 70 42 23.2	+ 36.4	Y.	
27	29.985	41.5	34.1	+ 1 0.8	S. 77 55 58.7	4 35.0	— 39 6 54.9	— 5.5	Y.	
28	. .	. .	. .	+ 2 50.2	63 37 53.9	2 0.9	— 24 46 16.0	— 10.3	Y.	
29	. .	. .	. .	+ 2 21.3	74 42 25.4	3 36.8	— 35 52 23.4	— 7.3	Y.	
30	. .	. .	. .	— 1 13.4	0 28 52.5	0.5	+ 38 24 45.8	— 30.4	Y.	
31	. .	. .	. .	+ 1 0.7	S. 0 31 6.7	0.5	+ 38 22 31.6	— 30.4	Y.	
32	. .	. .	. .	+ 1 49.9	N. 1 3 6.0	1.1	+ 39 56 45.9	— 30.5	Y.	
33	29.956	40.8	34.0	— 2 25.9	S. 65 47 38.2	+ 2 13.1	— 26 56 12.5	— 10.6	Y.	
34	29.954	40.3	34.0	— 10.8	S. 27 34 51.5	-43 24.4	+ 12 2 11.6	. .	Y.	
35	. .	. .	. .	— 0.7	N. 0 9 52.2	+ 0.2	+ 39 3 31.2	— 29.4	Y.	
36	. .	. .	. .	+ 2 12.9	S. 69 17 16.0	2 37.8	— 30 26 15.0	— 10.3	Y.	
37	. .	. .	. .	— 1 27.7	N. 0 6 18.2	0.1	+ 38 59 57.1	— 28.4	Y.	
38	. .	. .	. .	— 1 58.4	S. 17 28 1.1	18.9	+ 21 25 18.8	— 26.0	Y.	
39	. .	. .	. .	— 24.8	N. 0 5 16.5	0.1	+ 38 58 55.4	— 27.6	Y.	
40	29.940	39.8	34.0	+ 1 17.2	S. 24 11 24.0	27.0	+ 14 41 47.8	— 21.6	Y.	
41	. .	. .	. .	+ 1 15.2	15 1 18.0	16.1	+ 23 52 4.7	— 22.7	Y.	
42	. .	. .	. .	+ 1 18.0	26 36 20.9	30.1	+ 12 16 47.8	— 19.7	Y.	
43	. .	. .	. .	— 1 6.1	25 23 56.6	28.5	+ 13 29 13.7	— 19.4	Y.	
44	. .	. .	. .	+ 54.7	27 36 0.5	31.4	+ 11 17 6.9	— 18.5	Y.	
45	29.926	39.2	34.2	+ 11.7	S. 17 10 13.4	18.6	+ 21 43 6.8	— 19.1	Y.	
46	. .	. .	. .	+ 38.4	N. 5 34 12.7	5.9	+ 44 27 57.4	— 21.4	Y.	
47	. .	. .	. .	— 1 54.9	S. 5 13 13.1	4.5	+ 33 40 21.2	— 19.1	Y.	
48	. .	. .	. .	— 1 27.3	3 13 39.8	3.4	+ 35 39 55.6	— 18.6	Y.	
49	. .	. .	. .	+ 2 0.8	S. 36 37 5.7	44.6	+ 2 15 48.5	— 14.0	Y.	
50	29.920	39.0	34.3	+ 2 48.3	N. 4 52 7.8	5.1	+ 43 45 51.7	— 16.7	Y.	
51	. .	. .	. .	. .		. .		. .	Y.	
52	30.114	46.5	40.8	— 1 14.7	S. 72 43 51.7	3 9.5	— 33 53 22.4	— 5.3	Y.	
53	. .	. .	. .	+ 56.9	S. 26 11 5.2	29.0	+ 12 42 4.6	— 21.5	Y.	
54	. .	. .	. .	— 2 59.9	N. 0 12 53.0	0.2	+ 39 6 32.0	— 30.2	Y.	
55	. .	. .	. .	— 1 38.3	S. 2 48 20.9	2.9	+ 36 5 15.0	— 29.6	Y.	
56	30.106	45.0	38.4	— 3.5	N. 71 10 5.1	2 53.9	+ 69 53 22.2	+ 36.3	Y.	
57	. .	. .	. .	+ 55.1	S. 37 46 9.2	46.4	+ 1 6 43.2	— 18.5	Y.	—1″.02 applied to mean of B, C, D, and E.
58	. .	. .	. .	+ 2 28.7	N. 21 32 30.7	23.7	+ 60 26 33.2	— 35.4	Y.	
59	30.100	43.2	35.5	+ 2 16.1	S. 74 42 22.9	3 37.1	— 35 52 21.2	— 7.2	Y.	
60	. .	. .	. .	+ 1 45.2	S. 20 21 54.8	22.4	+ 18 31 21.6	— 24.7	Y.	
61	. .	. .	. .	+ 1 46.2	N. 1 3 7.0	1.1	+ 39 56 46.9	— 30.6	Y.	
62	30.094	42.0	34.8	— 2 27.4	S. 65 47 38.2	2 13.4	— 26 56 12.8	— 10.5	Y.	
63	. .	. .	. .	+ 1 6.6	18 26 9.9	20.1	+ 20 27 8.8	— 24.9	Y.	
64	. .	. .	. .	— 2 38.5	S. 1 37 31.2	1.7	+ 37 16 5.9	— 29.2	Y.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit Wires.	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
1874.						° ′ ″	″	″	″	″	″	″	r.	r.	r.
Dec. 19	1	θ Arietis	5.5	3	III–VII	39 34 58.9	59.8	65.9	63.2	66.6	60.9	62.55	32.988	−0.728	32.257
	2	Lalande 4761 . .	7.0	3	III–VII	22 25 3.2	7.1	11.9	8.0	12.2	4.2	7.77	35.170	. .	34.435
	3	Weisse (2) II, 915 .	5.5	3	V–IX	23 25 4.9	7.8	13.0	9.2	13.2	4.9	8.83	29.077	. .	28.334
	4	σ Arietis	5.5	3	III–VII	44 20 4.4	8.4	12.3	9.9	13.2	5.1	8.88	32.706	. .	31.976
	5	Moon S.	. .	3	III–VII	41 20 15.2	20.2	25.8	21.7	27.8	18.2	21.48	29.639	. .	28.908
	6	B. A. C. 980 . . .	6.5	3	III–VII	32 30 0.2	3.1	6.3	4.2	7.6	0.3	3.62	34.124	. .	33.391
	7	B. A. C. 5140, S. P. .	. .	2	V, 5	326 35 2.4	4.4	11.4	5.4	11.2	0.7	5.92	26.467	. .	25.742
	8	Nadir	. .	.	. .	200 0 2.1	4.3	10.9	7.0	9.2	2.7	6.03	30.771	. .	. .
21	9	Weisse O, 312 . .	7.0	3	III–VII	55 45 2.1	4.2	9.8	9.4	9.2	2.7	6.23	31.003	−0.687	30.315
	10	Anon. $0^h\ 35^m\ 30^s$.	8.5	3	III–VII	57 45 oblit.	59.2	4.1	2.3	5.8	57.2	0.66	28.445	. .	27.758
	11	Lacaille 216 . . .	7.0	3	III–VII	96 25 4.7	11.2	15.8	12.2	14.6	5.6	10.68	28.266	. .	27.586
	12	ψ^2 Piscium	6.0	3	III–VII	38 50 3.1	7.9	12.7	8.8	3.2	4.3	6.67	33.271	. .	32.580
	13	39 Ceti	. .	3	III–VII	62 4 54.7	59.2	62.9	61.5	63.2	56.2	59.62	35.892	. .	35.206
	14	O. Arg. S. 850 . .	7.2	3	III–VII	76 45 4.0	9.3	14.8	13.0	13.1	6.0	10.03	27.477	. .	26.793
	15	Anon. $1^h\ 43^m\ 19^s$.	8.5	3	III–VII	45 15 2.6	8.2	12.9	10.1	10.6	3.9	8.05	27.540	. .	26.851
	16	57 Ceti	. .	3	V–IX	80 20 1.4	8.2	12.6	11.1	10.8	3.8	7.98	34.872	. .	34.193
	17	Weisse II, 51. . . .	. .	3	III–VII	54 55 0.8	3.8	8.0	6.6	8.2	59.7	4.52	35.046	. .	34.358
	18	69 Ceti	. .	3	III–VII	59 5 1.5	5.9	9.8	9.2	10.6	3.7	6.78	33.992	. .	33.305
	19	Weisse II, 437 . .	8.3	3	III–VII	65 29 59.7	63.0	69.1	67.3	68.6	59.6	64.55	38.471	. .	37.785
	20	Weisse (2) II, 915 .	. .	3	III–VII	23 24 58.8	62.6	66.9	65.3	65.0	57.6	62.70	28.888	. .	28.194
	21	σ Arietis	. .	3	III–VII	44 20 3.7	8.8	12.7	10.5	11.7	2.7	8.35	32.640	. .	31.951
	22	Nadir	. .	.	. .	200 0 0.8	5.8	11.1	9.8	9.7	2.5	6.62	30.749	. .	. .
29	23	σ Andromedæ . . .	5.0	3	III–VII	22 50 2.2	4.1	9.1	3.9	8.4	3.1	5.13	34.765	−0.609	34.149
	24	Weisse O, 312 . .	. .	2	VII, IX	55 45 3.8	2.8	11.1	6.9	9.2	4.7	6.42	30.854	. .	30.243
	25	4 Draconis, S. P. . .	. .	3	IV–VI	308 49 59.0	58.3	66.2	60.0	64.8	59.2	61.25	30.890	. .	30.289
	26	ζ Andromedæ . . .	. .	3	III–VII	35 20 0.0	0.8	6.7	1.9	3.9	0.7	2.33	34.351	. .	33.738
	27	η Andromedæ . . .	5.0	3	III–VII	36 10 3.5	5.8	12.9	8.5	12.3	4.8	7.93	33.314	. .	32.701
	28	μ Cassiopeæ . . .	. .	3	IV–VI	4 35 2.2	3.6	9.8	5.9	7.8	2.4	5.28	30.170	. .	29.557
	29	39 Ceti	. .	3	III–VII	6 24 59.1	60.9	66.1	62.8	64.8	60.0	62.28	35.819	. .	35.211
	30	B. A. C. 464 . . .	. .	3	V–IX	51 20 0.5	2.4	7.9	3.9	7.2	2.0	3.98	32.667	. .	32.061
	31	τ Andromedæ . . .	. .	3	III–VII	18 55 3.2	5.2	11.9	8.0	8.4	3.2	6.65	27.248	. .	26.631
	32	γ^1 Arietis (1st *) .	. .	2	III, VII	40 15 5.2	9.0	14.7	12.0	13.2	9.2.	10.55	35.978	. .	35.364
	33	γ^1 Arietis (2d *) .	. .	2	V, IX	" " "	"	"	"	"	"	"	36.286	. .	35.669
	34	Nadir	. .	.	. .	199 59 56.4	60.2	65.0	61.3	62.8	59.4	60.85	30.485	. .	. .
31	35	88 Piscium	6.0	3	III–VII	52 35 5.0	9.7	13.1	13.4	10.5	7.5	9.87	34.832	−0.575	34.256
	36	O. Arg. S. 850 . .	8.0	3	IV–VI	76 45 0.0	4.3	9.0	8.4	4.5	1.0	4.53	27.299	. .	26.725
	37	O. Arg. N. 1812 . .	6.0	3	IV–VI	351 30 4.3	10.2	14.9	13.8	9.8	3.4	9.40	32.127	. .	31.545
	38	Anon. $1^h\ 42^m\ 7^s$.	9.5	3	III–VII	51 50 4.1	8.6	11.1	13.1	9.6	5.5	8.67	29.582	. .	29.006
	39	57 Ceti	. .	3	III–VII	80 20 1.2	8.0	10.9	10.8	8.7	4.0	7.27	34.850	. .	34.279
	40	Anon. $2^h\ 10^m\ 54^s$.	8.5	3	IV–VI	3 35 0.9	8.7	12.2	10.2	7.8	2.8	7.10	29.650	. .	29.071
	41	12 Trianguli	. .	3	III–VII	29 45 3.9	8.9	13.2	14.9	10.2	4.2	9.22	27.597	. .	27.017
	42	ν Ceti	5.0	3	III–VII	53 50 6.9	12.7	15.6	16.8	12.6	7.1	11.95	30.766	. .	30.190
	43	Weisse (2) II, 972 .	8.0	3	III–VII	34 5 1.1	4.8	9.1	8.8	3.8	0.9	4.75	27.168	. .	26.589
	44	Anon. $2^h\ 52^m\ 22^s$.	9.0	3	III–VII	44 10 0.6	5.8	9.0	9.9	5.2	0.0	5.08	28.252	. .	27.674
	45	B. A. C. 5140, S. P. .	. .	3	1–5	326 35 0.0	5.2	9.0	7.4	4.5	58.3	4.07	26.194	. .	25.622
	46	Anon. $3^h\ 27^m\ 35^s$.	9.0	2	V, IX	27 35 5.3	11.8	15.9	16.2	10.2	6.0	10.90	28.630	. .	28.040
	47	24 Tauri	7.7	1	V	35 9 56.7	62.3	65.9	66.0	60.2	55.2	61.05	31.480	. .	30.905
	48	28 Tauri	6.5	3	III–VII	" " "	"	"	"	"	"	"	34.362	. .	33.783
	49	Lalande 7206. . .	6.5	3	III–VII	24 10 8.3	13.8	17.8	18.8	13.3	7.9	13.32	29.912	. .	29.330
	50	Nadir	. .	.	. .	200 0 4.3	10.6	13.4	15.8	7.2	5.3	9.43	30.729	−0.575	. .

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith Distance.	Refraction.	Observed Declination.	Reduction to 1874.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	′ ″		
1	. .	. .	. .	− 1 10.8	S. 19 33 51.8	21.5	+ 19 19 25.5	− 24.2	Y.	
2	. .	. .	. .	− 2 19.0	2 22 48.8	2.5	+ 36 30 47.5	− 27.8	Y.	
3	. .	. .	. .	+ 52.3	3 26 1.1	3.6	+ 35 27 34.1	− 27.0	Y.	
4	. .	. .	. .	− 1 1.9	24 19 6.9	+ 27.4	+ 14 34 4.5	− 21.8	Y.	
5	30.080	40.0	32.5	+ 34.2	21 20 55.7	−37 47.8	+ 18 10 31.0	. .	Y.	
6	. .	. .	. .	− 1 46.3	S. 12 28 17.3	+ 13.4	+ 26 25 8.1	− 23.7	Y.	
7	30.076	39.0	32.2	+ 2 13.5	N. 53 22 40.6	1 21.4	+ 87 42 19.2	+ 29.6	Y.	
8	. .	. .	. .	. .		. .		. .	Y.	
9	30.124	39.0	32.1	− 9.9	S. 35 44 56.4	43.7	+ 3 7 58.7	− 18.6	Y.	
10	. .	. .	. .	+ 1 10.2	37 46 10.9	47.1	+ 1 6 40.8	− 18.3	Y.	−2″.19 applied to mean of B, C, D, and E.
11	30.124	38.5	31.3	+ 1 15.7	76 26 26.4	4 7.5	− 37 36 55.1	− 5.8	Y.	
12	. .	. .	. .	− 1 20.9	18 48 45.8	20.7	+ 20 4 32.3	− 25.1	Y.	
13	30.130	38.0	30.8	− 2 43.2	42 2 16.5	54.9	− 3 9 32.6	− 17.4	Y.	
14	. .	. .	. .	+ 1 40.5	56 46 50.5	1 32.8	− 17 54 44.5	− 12.7	Y.	
15	30.120	37.0	30.4	+ 1 38.7	25 16 46.7	28.8	+ 13 36 23.3	− 23.0	Y.	
16	. .	. .	. .	− 2 11.4	60 17 56.6	1 46.3	− 21 26 4.1	− 12.0	Y.	
17	30.110	36.8	31.4	− 2 16.6	34 52 47.9	42.4	+ 4 0 8.5	− 19.7	Y.	
18	. .	. .	. .	− 1 43.6	39 3 23.2	49.3	− 0 10 33.7	− 18.4	Y.	
19	. .	. .	. .	− 4 3.9	45 26 0.6	1 1.6	− 6 33 23.4	− 16.4	Y.	
20	. .	. .	. .	+ 56.6	3 25 59.3	3.7	+ 35 27 35.8	− 27.2	Y.	
21	. .	. .	. .	− 1 1.2	24 19 7.2	27.5	+ 14 34 4.1	− 21.8	Y.	
22	. .	. .	. .	. .		. .		. .	Y.	
23	30.112	49.2	42.6	− 2 10.0	2 47 55.1	2.9	+ 36 5 40.8	− 28.9	Y.	
24	. .	. .	. .	− 7.6	S. 35 44 58.8	42.7	+ 3 7 57.3	− 18.1	Y.	
25	. .	. .	42.3	− 9.1	N. 71 10 7.8	2 52.6	+ 69 53 20.8	+ 37.8	Y.	
26	. .	. .	. .	− 1 57.2	S. 15 18 5.2	16.3	+ 23 35 17.3	− 26.1	Y.	
27	. .	. .	. .	− 1 24.7	S. 16 8 43.3	17.2	+ 22 44 38.3	− 25.6	Y.	
28	30.136	48.5	41.3	+ 13.9	N. 15 24 40.8	16.4	+ 54 18 36.0	− 34.7	Y.	
29	. .	. .	. .	− 2 43.3	S. 42 2 19.0	53.7	− 3 9 33.9	− 16.8	Y.	
30	. .	. .	. .	− 1 4.6	S. 31 18 59.4	36.3	+ 7 34 3.1	− 20.6	Y.	
31	. .	. .	. .	+ 1 45.6	N. 1 3 7.8	1.1	+ 39 56 47.7	− 30.9	Y.	
32	. .	. .	. .	− 2 48.1	S. 20 12 22.5	22.0	+ 18 40 54.3	− 24.2	Y.	
33	30.170	47.2	40.2	− 2 57.7	20 12 12.9	22.0	+ 18 41 3.9	− 24.2	Y.	
34	. .	. .	. .	. .		. .		. .	Y.	Finding the Collimator broken, used that of the Transit Instrument.
35	30.666	34.0	24.4	− 2 13.4	32 32 56.5	40.1	+ 6 20 2.2	− 20.0	Y.	
36	. .	. .	. .	+ 1 42.7	S. 56 46 47.2	1 35.7	− 17 54 44.1	− 11.8	Y.	
37	30.652	32.5	24.0	− 48.4	N. 28 30 39.0	34.1	+ 67 24 51.9	− 37.1	Y.	
38	. .	. .	. .	+ 31.1	S. 31 50 39.8	39.0	+ 7 2 20.0	− 20.3	Y.	Star northward, a few seconds after.
39	30.654	31.5	24.0	− 2 14.1	S. 60 17 53.2	1 49.8	− 21 26 4.2	− 10.9	Y.	
40	. .	. .	. .	+ 29.1	N. 16 24 23.8	18.5	+ 55 18 21.1	− 33.7	Y.	
41	. .	. .	. .	+ 1 33.5	S. 9 46 42.7	10.8	+ 29 6 45.3	− 26.7	Y.	
42	30.656	30.8	23.4	− 6.0	33 50 6.0	42.2	+ 5 2 50.6	− 19.0	Y.	
43	. .	. .	. .	+ 1 46.9	14 6 51.7	15.8	+ 24 46 31.3	− 24.6	Y.	
44	. .	. .	. .	+ 1 12.9	S. 24 11 18.0	28.3	+ 14 41 52.5	− 21.2	Y.	
45	30.654	29.5	22.2	+ 2 17.2	N. 53 22 38.7	1 24.7	+ 87 42 17.8	+ 33.1	Y.	
46	. .	. .	. .	+ 1 1.4	S. 7 36 12.3	8.4	+ 31 17 18.1	− 23.7	Y.	
47	. .	. .	. .	− 28.3	15 9 32.7	17.1	+ 23 43 49.0	− 21.0	Y.	
48	. .	. .	. .	− 1 58.6	15 8 2.5	17.1	+ 23 45 19.2	− 20.9	Y.	
49	30.666	29.0	21.6	+ 21.0	S. 4 10 34.3	4.6	+ 34 42 59.9	− 22.9	Y.	
50	. .	. .	. .	. .		. .		. .	Y.	

OBSERVATIONS

MADE WITH THE

XXVI-INCH EQUATORIAL.

1874.

OBSERVATIONS

MADE WITH

THE XXVI-INCH EQUATORIAL.

Date.	Object observed.	Washington Mean Time.	Microm. I (smallest reading).	Microm. II (largest reading).	Washington Mean Time.	Position Circle. Index.	Ver. I.	Ver. II.	Eye-piece.	Remarks.
1874.		h. m.	r.	r.	h. m.	°	°	°		
Jan. 2	Satellite of NEPTUNE.	6 58	62.585	65.708	7 15	143.5?	. .	. .	. .	Setting for distances, 237°. The observer is NEWCOMB unless otherwise indicated.
			.610	.748		141.5?				
			.630	.722		141.5?				
			.598	.740		141.8				
		7 10	.607	.750		140.6				
						140.5				
						139.0				
					7 32	141.5				
	Mean	7 4	62.606	65.734	7 24	140.7				
		7 42	62.630	65.810	. .	. .	. .	. .	. .	Parallel, 271°.5.
			.654	.775						
			.628	.770						
			.598	.765						
		7 55	.625	.750						
	Mean	7 48	62.627	65.774						
	γ^2 *Andromedæ* . . .	. .	.134	.232	. .	251.0	. .	. .	. .	The following star is the smaller.
			.132	.246		253.5				
						253.0				
						251.5				
	Mean	. .	.133	.239		252.2				
	Companion of *Procyon*	. .	59.664	68.637	. .	50.4	. .	. .	. .	Parallel, 271°.6.
			.716	.666		49.9				
			.673	.641		49.0				
						49.8				
						49.7				
	Mean	. .	59.684	68.648		49.8				
3	Satellite of NEPTUNE.	6 43	62.865	65.560	. .	. .	. .	. .	. .	Through clouds completely obscuring *o Piscium* (4.5 mag.) to the naked eye.
			.900	.502						
			.872	.551						
			.898	.622						
		. .		.496						
	Mean	. .	62.884	65.546						
8	Satellite of NEPTUNE.	7 47	62.513	65.798	8 10	147.5	. .	. .	. .	Setting for distances, 238°. Parallel, 274°.7.
			.572	.835		147.0				
			.565	.756		147.4				
			.515	.792		145.6				
		8 3	.555	.805	8 15	147.0				
	Mean	7 55	62.544	65.797	8 12	146.9				
		8 21	62.556	65.788	. .	. .	. .	. .	. .	Air very clear, but images bad, especially during the last three or four measures.
			.536	.810						
			.464	.842						
			.428	.828						
		8 36	.541	.880						
	Mean	8 28	62.505	65.830						

Date.	Object observed.	Washington Mean Time.	Microm. I (smallest reading).	Microm. II (largest reading).	Washington Mean Time.	Position Circle. Index.	Ver. I.	Ver. II.	Eye-piece.	Remarks.
1874.		h. m.	r.	r.	h. m.	°	°	°		
Jan. 8	OBERON	10 26	59.827	68.602	11 3	11.0	. .	. .	. .	Distance of UMBRIEL extremely uncertain. Position angles of OBERON and TITANIA somewhat doubtful, as the Position Circle was found loose January 9. It was probably loosened after the determination of the parallel, and before six measures of the position angle of UMBRIEL, which are not recorded.
			.775	.560		11.2				
			.820	.615	11 6	11.2				
			.740	.540						
		10 40	.765	.568						
	Mean	10 33	59.785	68.577	11 4	11.1				
	TITANIA	10 45	62.005	66.420			. .	. .	. .	Parallel, 272°.3.
			61.970	.356	11 9	282.5				
			62.035	.330		284.5				
		11 1	.020	.360	11 12	285.0				
	Mean	10 53	62.008	66.366	11 10	284.0				
	UMBRIEL	12 27	62.227	66.280	11 40	*180 ± °2	. .	. .	.	*Estimated.
9	Satellite of NEPTUNE.	6 58	62.995	65.418						
			.952	.328						
			[63].005	.389						
		7 9		.437						
	Mean	7 4	62.984	65.393						
12	Satellite of NEPTUNE.	7 30	63.050	65.315						
14	Satellite of NEPTUNE.	6 52	62.531	65.853	7 10	146.9	. .	. .	. .	Setting for distances, 238°. Parallel, 273°.0.
			.520	.827		145.5				
			.503	.848		146.5				
			.522	.844		147.0				
		7 7	.506	.845	7 14	146.8				
	Mean	7 0	62.516	65.843	7 12	146.5				
		7 21	62.572	65.902						
			.503	.880						
			.515	.820						
			.515	.805						
		7 32	.526	.795						
	Mean	7 26	62.526	65.840						
	Companion of *Sirius*.	. .	62.948	65.367	. .	124.6				
			.975	.436		124.9				
			.963	.332		123.5				
			.971	.410						
	Mean	. .	62.964	65.386		124.3				
	OBERON	6 4*	59.594	68.840	6 46*	179.0	. .	. .	. .	Setting for distances, 103°.
			.526	.753	. .	180.2	. .	. .	. .	*Sidereal time.
			.526	.712	6.51*	180.0				
		6 16*	.537	.844						
	Mean	6 10*	59.546	68.787	6 48	179.7				
	TITANIA	6 33*	60.772	67.600	6 55*	171.0	. .	. .	. .	TITANIA about 0°, OBERON about 180° in position angle. Parallel about 273°.5.
			.778	.567		172.0				
		6 42*	.777	.596	7 0*	171.5				*Sidereal time.
	Mean	6 38*	60.776	67.587	6 58*	171.5				
	ARIEL	7 40*	62.656	65.710		188.8	. .	. .	. .	*Sidereal time.
		7 50*	.662	.630	7 56*	186.5				
						185.5				
	Mean	7 45*	62.659	65.670		186.9				
	UMBRIEL	8 0*	62.115	66.192		350.0	. .	. .	. .	Setting, 275°. Parallel for UMBRIEL and ARIEL, 272°.7.
		8 12*	.152	.205	8 20*	348.0				*Sidereal time.
	Mean	8 6*	62.134	66.198		349.0				

Date.	Object observed.	Washington Mean Time.	Microm. I (smallest reading).	Microm. II (largest reading).	Washington Mean Time.	Position Circle. Index.	Ver. I.	Ver. II.	Eye-piece.	Remarks.
1874.		h. m.	r.	r.	h. m.	°	°	°		
Jan. 15	Satellite of NEPTUNE.	6 39	63.109	65.260	6 57	147.3	. .	. .	. .	Parallel, 251°.5. Weight of position angle=1.
			.155	.288		144.5				
			.156	.252		147.0				
			.137	.237		142.0				
		6 52	.125	.220	7 4	140.0				
	Mean	6 46	63.136	65.251	7 0	144.2				
		7 13	63.115	65.236	7 25	140.0	. .	. .	. .	Weight of position angle=2.
			.138	.225		144.5				
			.095	.251		144.0				
			.130	.226		144.5				
		7 21	.158	.238	7 30	145.0				
	Mean	7 17	63.127	65.235	7 28	143.6				
17	Satellite of NEPTUNE.	7 8	62.542	65.778	7 25	139.9	. .	. .	. .	Setting for distances, 231°. Parallel, 266°.0.
			.554	.780		139.8				
			.569	.787		138.5				
			.510	.790		139.3				
		7 21	.522	.809	7 33	139.7				
	Mean	7 14	62.539	65.789	7 29	139.4				
		7 43	62.516	65.792						
			.557	.760						
			.536	.806						
			.556	.788						
		7 58	.530	.776						
	Mean	7 50	62.539	65.784						
	OBERON	10 24	*61.935	61.318	11 25	249.5	. .	. .	. .	*Apparently an error of five revolutions in first record of Micrometer I.
			66.958	.345		250.1				
		10 36	.930	.336	11 29	249.2				
	Mean	10 30	66.941	61.333	11 27	249.6				
	TITANIA	10 49	61.810	66.510	11 17	297.3	. .	. .	. .	Parallel, 265°.9.
			.830	.515		297.0				
		10 54	.882	.474	11 23	297.0				
	Mean	10 52	61.841	66.500	11 20	297.2				
28	ARIEL	10 41	62.682	65.584	11 2	65.0	. .	. .	. .	Parallel, 144°.5.
			.716	.625		62.0				
			.740	.595		63.7				
			.725	.608		62.5				
		11 0	.715	.590	11 9	64.0				
	Mean	10 50	62.716	65.600	11 6	63.4				
29	Satellite of NEPTUNE.	6 59	62.558	65.755	7 18	19.5	. .	. .	. .	Setting for distances, 110°. Parallel, 146°.0. In making the first set of measures of distances, the illumination of the wires was from *above*, as has been usual; but in the last set, it was from *below*.
			.603	.735		22.0				
			.574	.820		23.0				
			.569	.798		21.4				
		7 13	.578	.830	7 24	23.5				
	Mean	7 06	62.576	65.788	7 21	21.9				
		7 32	62.531	65.797						
			.575	.804						
			.505	.785						
			.530	.855						
		7 47	.458	.775						
	Mean	7 40	62.520	65.803						
31	Satellite of NEPTUNE.	7 17	62.977	65.363						
			.992	.290						
			63.022	.410						
		7 29		.372						
	Mean	7 23	62.997	65.359						

Date.	Object observed.	Washington Mean Time.	Microm. I (smallest reading).	Microm. II (largest reading).	Washington Mean Time.	Position Circle. Index.	Ver. I.	Ver. II.	Eye-piece.	Remarks.
1874.		h. m.	r.	r.	h. m.	°	°	°		
Feb. 4	Satellite of NEPTUNE.	7 3*	62.645	65.732	7 20*	104.4	. .	. .	. .	Setting for distances, 16°. Parallel, 46°.6. Illumination of wires from *above*.
			.615	.697		105.1				* These times are recorded by Howard Clock No. 628 (mean-time clock). Correction, + 1m 20s ±.
			.633	.722		104.9				
			.671	.672		105.1				
		7 17*	.615	.720	7 25*	104.0				
	Mean	7 11	62.636	65.709	7 25	104.7				
		8 2*	62.625	65.765	. .	. .	. .	. .	. .	Illumination of wires from *below*.
			.652	.715						* These times are recorded by Howard Clock No. 628 (mean-time clock). Correction, + 1m 20s ±.
			.638	.674						
			.662	65.685						
		8 22*	.693	.648						
	Mean	8 13	62.654	65.697						
	UMBRIEL	8 49*	62.114	. .	. .	. .	. .	. .	. .	* Times by chronometer; they are correct, as those which follow on this date.
		9 0*		66.266	9 14*	311.5				
			62.099	.230		312.0				
			.068	.282		313.0				
		9 10*	.085	.291	9 19*	313.2				
	Mean	9 00	62.092	66.267	9 16	312.4				
	OBERON	9 30	.750	.597	9 23	326.0	. .	. .	. .	Setting for distances, 57°.5.
			59.778	68.558		327.0				
			.810	.620		326.1				
		9 41	.775	.598	9 28	326.0				
	Mean	9 36	59.778	68.593	9 26	326.3				
	TITANIA	9 44	61.320	67.064	9 57	101.5	. .	. .	. .	Setting for distances, 12°. Parallel, 227° ±.
			.328	.006		102.2				
			.357	.021		101.4				
		9 50	.318	.044	10 2	100.8				
	Mean	9 47	61.331	67.034	10 00	101.5				
10	Satellite of NEPTUNE.	7 0	62.705	65.655	7 21	308.7	. .	. .	. .	Illumination of wires from *above*. Parallel, 250°.6. Very bad night and clock-work going badly.
			.763	.634		308.6				
			.698	.575		310.1				
			.680	.649:		310.0				
		7 16	.695	.680	7 31	309.5				
	Mean	7 8	62.708	65.639	7 26	309.4				
		7 38	62.685	65.631	. .	. .	. .	. .	. .	Illumination of wires from *below*. Seeing too bad to continue work.
		7 46	.728	.625						
	Mean	7 42	62.706	65.628						
11	Companion of *Sirius*.	. .	.027	.340	. .	317.5	. .	. .	. .	Parallel, 287°.4.
			.981	.300		318.0				
			.030	.344		318.0				
			.028	.347		317.0				
	Mean	. .	.016	.333		317.6				
14	UMBRIEL	11 15	62.295	66.070	. .	. .	. .	. .	. .	Could not measure position of UMBRIEL. The measures of UMBRIEL are not to be considered as distances so much as differences of declination.
		11 34	62.260	66.093	. .	. .	. .	. .	. .	Setting for distances, 205°.5, *i.e.* measured distances must be multiplied by sec. 19°.5.
			.278	.078						
		11 42	.308	.115						
	Mean	11 30	62.285	66.089						
	TITANIA	11 21	60.805	67.660	11 58.5	119.0	. .	. .	. .	Parallel, 206°.2.
			.740	.622		119.0				
			.812	.603						
		11 31	.830	.636	12 2	117.0	. .	. .	. .	Half-weight.
	Mean	11 26	60.797	67.630	11 0	118.6				
16	Satellite of NEPTUNE.	7 18.5	62.795	65.544	. .	. .	. .	. .	. .	Seeing too bad to go on.

Date.	Object observed.	Washington Mean Time.	Microm. I (smallest reading).	Microm. II (largest reading).	Washington Mean Time.	Position Circle. Index.	Ver. I.	Ver. II.	Eye-piece.	Remarks.
1874.		h. m.	r.	r.	h. m.	°	°	°		
Feb. 16	TITANIA	9 32	62.054	66.320	9 23	273.0				
			.050	.257		271.5				
			.145	.250		273.2				
		9 51	.138	.295	9 28	274.0				
	Mean	9 42	62.097	66.280	9 26	272.9				
	OBERON	9 8	59.645	68.665	9 53	175.5	. .	. .	. .	Parallel, 108°.2.
			.670	.690		175.0				
			.738	.649		174.8				
		9 20	.706	.688	10 0	175.3				
	Mean	9 14	59.690	68.673	9 56	175.2				
18	Companion of *Sirius*	7	.155	.032	. .	. .	. .	. .	4	N. B. Up to this date eye-pieces 3 and 4 were employed indiscriminately.
			.364	.092						
	Mean	. .	.260	.062						
			.420	.041	. .	299.5	28.5	. .	3	Parallel by vernier I, 0°.1; by vernier II, 180°.1.
			.345	.001		301.3	30.3			
			.332	.015			30.7			
			.347	.038			28.6			
			.315	.061			29.2			
	Mean	. .	.352	.031	. .	. .	29.5			
	TITANIA	10 6	60.715	67.621	10 41	263.3	. .	. .	*	Setting for distances, 347°, by index. * Probably eye-piece 4 was employed on the satellites of URANUS, as was usual.
			.755	.634		263.0				
			.774	.581	10 49	262.8				
		10 17	.766	.625						
	Mean	10 12	60.752	67.615	10 45	263.0				
	OBERON	10 20	60.175	68.205	10 51	291.3				
				.205		20.8				
		10 31	.232		10 56	291.0				
			.150	.210						
		10 38	.183	.150						
	Mean	10 30	60.185	68.192	10 54	291.0				
	UMBRIEL	11 39	62.337	66.130	11 32	254.0	. .	. .	. .	Observations of UMBRIEL taken with great difficulty; clock-work going badly. The bisections are, however, satisfactory, except the last [62.232]. ARIEL and UMBRIEL very close together; they have nearly the same angle of position. * Half-weight.
		11 51	.232*	66.120						
	Mean	11 45	62.301	66.125						
21	Companion of *Sirius*	7 30	62.958	65.345	. .	5.7	. .	. .	3	Parallel, 334°.9.
			.989	.325		5.2				
			[63].018	.352		6.7				
			.995	.368		7.2				
			.968	.340		5.2				
	Mean	. .	62.986	65.346	. .	6.0				
	ARIEL	8 50	62.699	65.614	. .	. .	. .	. .	. .	Setting for distances, 310°, by index.
				.680						
		9 33	.770							
		9 40	.718	.628*	. .	. .	. .	. .	. .	* Good.
	Mean	9 31	62.729	65.641						
	OBERON	9 44	60.855	67.450	10 9	10.0	. .	. .	. .	OBERON and TITANIA too close together to get accurate angles of position of either.
			.862	.525	10 11	12.2				
		9 56	.901	.522						
	Mean	9 50	60.873	67.499	. .	11.1				
	TITANIA	9 58	61.691	66.659	. .	. .	. .	. .	. .	Setting for distances of both OBERON and TITANIA, 278°.4.
			.678	.648						
		10 7	.748	.648						
	Mean	10 2	61.706	66.652						
Mar. 9	UMBRIEL	9 10	62.885	. .	. .	. .	. .	. .	. .	Seeing too bad to go on.

Date.	Object observed.	Washington Mean Time.	Microm. I (smallest reading).	Microm. II (largest reading).	Washington Mean Time.	Position Circle. Index.	Ver. I.	Ver. II.	Eye-piece.	Remarks.
1874.		h. m.	r.	r.	h. m.	°	°	°		
Mar. 10	Companion of *Sirius*.	7	62.880	65.130	. .	321.8	. .	. .	. .	Parallel, 292°.5. Observations difficult, owing to excessively bad images.
			.835	.179		323.2				
			.854	.150		324.4				
			.813	.182		320.6				
			.855	.128		324.0				
	Mean	. .	62.847	65.154		322.8				
	Oberon	8 15	59.845	68.125	8 51	38.6	. .	. .	. .	Setting for distances, 308° by index.
			.834	.138		38.5				
			.821	.228		39.0				
			.785	.206		39.0				
		8 29	.841	.208	8 59	39.3				
	Mean	8 21	59.825	68.181	8 55	38.9				
	Titania	8 33	62.891	67.225	9 1.5	302.2	. .	. .	. .	Parallel, 292°.3, for Titania and Oberon.
			.819	.227		303.5				11h. Put screen 20 inches in diameter over the center of the objective, leaving only a ring 3 inches broad. Turned to Uranus and saw both Oberon and Titania with entire distinctness, though Titania was only 22″ from the planet. Oberon was brighter than I have seen Ariel or Umbriel, and Titania nearly as bright.
			.825	.172		303.2				
			.839	.206		303.0				
		8 49	.789	.152	9 8	303.8				
	Mean	8 41	62.833	67.196	9 5	303.1				
11	Umbriel	8 0	62.061	65.872	8 27	188.2	. .	. .	. .	Setting for distances, 282° by index.
			.035	.962		184.5*	. .	. .	. .	* Half-weight.
			[61].989	[66].036	8 34	188.7*				
			[61].955	.999						
		8 22	.021	.985						
	Mean	8 11	62.012	65.971	8 30	187.4				
	Oberon	8 40	61.565	68.470	9 18	242.1	. .	. .	. .	Setting for distances, 158° by index.
			.622	.416		243.0				
			.590	.448		241.5				
			.621	.412		242.5				
		8 57	.590	.415	9 26	242.0				
	Mean	8 46	61.598	68.432	9 22	242.2.				
	Titania	9 1	62.015	68.065	9 27.5	. .	171.6	. .	. .	Index, 86°.5. Parallel, 292°.0.
			.000	.010			171.4			
			[61].997	[67].991			172.2	352.2		
			[61].985	[67].974				352.1		
		9 16	[61].988	[68].021	9 35			352.5		
	Mean	9 8	61.997	68.012	9 31	. .	172.0			
13	Companion of *Sirius*.	7 30	[63].802	[65].078	7	323.4	. .	. .	. .	Distance measured by Newcomb; angle of position by Holden.
			.928	.090		324.0				
			.852	.042		324.0				
						324.2				
						322.5				
	Mean	. .	63.861	65.070		323.6				
	Umbriel	8 51	62.050	65.932	9 21	178.4	. .	. .	. .	Setting for distances, 4°.0 by index.
			.035	.968		177.8				
		9 5	.051	.948	9 26.5	180.8*	. .	. .	. .	* Half-weight.
		9 9	.040	.976	9 29	182.1*				
					9 31.5	180.3				
	Mean	9 2	62.044	65.956	9 27	179.5				
	Oberon	9 39	60.860	67.210	10 5.5	321.7				
			.908	.195		321.8				
		9 51	.925	.128	10 10.5	321.5				
	Mean	9 45	60.898	67.178	10 8	321.7				
	Titania	9 53	61.160	66.844	10 13.5	229.6	. .	. .	. .	Parallel, 292°2.
			.208	.800		229.8				
		10 4	.145	.858	10 15.5	231.2				
	Mean	9 58	61.171	66.834	10 14	230.2				

Date.	Object observed.	Washington Mean Time.	Microm. I (smallest reading).	Microm. II (largest reading).	Washington Mean Time.	Position Circle. Index.	Ver. I.	Ver. II.	Eye-piece.	Remarks.
1874.		h. m.	r.	r.	h. m.	°	°	°		
Mar. 14	OBERON	8 15	60.158	67.770	8 45	65.8	. .	. .	. .	Setting for distances, 240°: Parallel, 9°.3.
			.147	.817		65.0				
			.175	.805		64.2				
		8 27	.154	.790		64.4				
	Me	8 21	60.158	67.796		64.8				
	TITANIA	8 32.5	61.880	66.146	8 52.5	355.1				
			.815	.162		356.7				
			.769	.138		355.0				
		8 43	.873	.162	8 58	357.0				
	Mean	8 38	61.834	66.152	8 55	356.0				
	ARIEL	9 34	62.678	65.341	9 51.5	71.3	. .	. .	. .	UMBRIEL could not be measured, although occasionally seen.
			.644	.290		71.8				
			.715	.282		71.2				
		9 49.5	.762*	.254†	9 57	70.0*	. .	. .	. .	*Half-weight. †Double weight.
	Mean	9 42	62.690	65.284	9 54	71.2				
20	Companion of *Sirius*.	7 30	[].860	[65].129	. .	. .	. .	. .	4	Excellent observation, but the seeing suddenly became bad.
			.899	.155						
			.887	.158						
			.858	.114						
	Mean	. .	62.876	65.139						
	UMBRIEL.	8 16.8	62.188	65.806	8 44.0	300.5	. .	. .	. .	Parallel, 7°.8.
			.234	.840	46	299.2				
			.168	.817	. .	. .	. .	. .	. .	Seeing again bad.
		8 21.3	.195	.763	10 4.5	305.5				
	Mean	8 19.0	62.196	65.806	9 11.7	301.7				
	OBERON	9 28.5	[60].725	[67].290	10 10.5	226.5	. .	. .	. .	Setting for distances, 312° by index.
			.695	.335		227.8				
			.684	.310		228.0				
		9 44	.648	.306	10 20.5	226.1				
	Mean	9 36	60.688	67.310	10 16	227.1				
	TITANIA	9 47	[60].804	[67].257	10 21.7	258.3	. .	. .	. .	Setting for distances, 347°.0 by index.
			.840	.212		257.0				
			.797	.197		257.8				
		9 50.5	.847	*(.140:)	10 27	258.0	. .	. .	. .	*Rejected.
		9 52.5		.157						
	Mean	9 50.0	60.822	67.206	10 24.4	257.8	. .	. .	. .	Seeing again bad. Parallel, 7°.8.
	Object north of URANUS	10 54	56.076	. .	10 56	279.0	. .	. .	. .	
21	OBERON	7 41	[59].958	[68].045	8 11.5	64.4	. .	. .	. .	Setting for distances, 332° by index.
			.991	.044		65.0				
			.995	.005		64.9				
		7 51.5	.944	.037	8 17	65.4				
	Mean	7 46.2	59.972	68.033	8 14	64.9				
	TITANIA	7 53	[60].649	[67].368	8 20	97.5	. . .	. .	. .	Setting for distances, 9°. Parallel, 3°.0. Very fine images.
			.691	.335		96.8				
			.678	.384		96.8				
		8 4	.671	.365	8 28	97.5				
	Mean	7 58	60.672	67.363	8 24	97.2				
24	Companion of *Sirius*.	. .	[62].961	[65].142	. .	. .	157.7	. .	. .	Parallel by vernier, 124°.8; by index, 35°.6.
			.856	.152			156.2			
			.830	.098			154.5			
			.900	.117			156.6			
			.897	.139			157.6			
	Mean	. .	62.889	65.130			156.5			

Date.	Object observed.	Washington Mean Time.	Microm. I (smallest reading).	Microm. II (largest reading).	Washington Mean Time.	Position Circle. Index.	Position Circle. Ver. I.	Position Circle. Ver. II.	Eye-piece.	Remarks.
1874.		h. m.	r.	r.	h. m.	°	°	°		
Mar. 24	UMBRIEL	8 26	[62].174	[65].936	9 34	323.0				
			.090	.885		324.5				
			.086	.922		323.2				
		8 44	.173	.925	9 38	324.5				
	Mean	8 35	62.131	65.917	9 36	323.8				
	OBERON	8 51	60.204	67.820	9 40	. .	63.5			
			.225	.768			63.7			
			.245	.749				243.8		
		9 0.5	.265	.786	9 49			244.4		
	Mean	8 54.45	60.235	67.781	9 44		63.8			
	TITANIA	9 6	[61].090	[66].912	9 53	. .	182.8			
			.092	.900			182.5			
			.095	.842			182.5			
		9 19	.100	.880	9 57		181.3			
	ean	9 12	61.094	66.884	9 55		182.3			
	ARIEL	10 8.5	[62].700	[65].217	10 23	266.6	. .	. .	. .	Very faint; distances extremely difficult and uncertain; angles comparatively good.
			.814	.255		268.0				
		10 36	.794	.240	10 29	265.4				
	Mean	10 22.2	62.769	65.237	10 26	266.7				
25	Companion of *Sirius*.	. .	[62].863	[65].047	7 30	65.6	. .	. .	3	Seeing poor. Weight., 2. Observer, HALL. Parallel, 34°.0.
			.929	.198		64.6				
			.884	.056		66.0				
			.834	.088		68.8				
						67.0				
	Mean	. .	62.878	65.097		66.4				
26	Companion of *Sirius*.	. .	[62].866	[65].196	7	64.0	. .	. .	3	Parallel, 33°.9. Observer, HALL. Weight, 3.
			.834	.147		67.0				
			.825	.169		64.0				
			.812	.170		66.0				
			.844	.230		66.0				
	Mean	. .	62.836	65.182		65.4				
27	Companion of *Sirius*.	. .	[62].915	[65].159	7		153.9	. .	3	Parallel by index, 213°.5; by vernier I, 123°.0; by vernier II, 302°.7.
			.878	.160			156.1			
			.880	.181			152.4			
			.923	.175			153.4			
			.898	.151			155.6			
	Mean	. .	62.899	65.165			154.3			
28	OBERON	8 55	[59].790	[68].254	9 36	101.5	. .	. .	. .	Parallel, 213°.7.
			.772	.207		101.4				
			.795	.261		101.7				
		9 7.5	.779	.187	9 41	101.3				
	Mean	9 1.2	59.784	68.227	9 38	101.5				
	TITANIA	9 9.5	[61.]436	[66].581	9 27	78.2	. .	. .	. .	Setting for distances, 348° by index.
			.400	.655		79.5				
			.467	.588		76.4				
		9 21	.472	.635	9 33	77.0				
	Mean	9 17.2	61.444	66.615	9.30	77.8				
30	OBERON	8 51	[59].728	[68].293	10 14.5	318.0	. .	. .	. .	Setting for distances, 43°.
			.742	.248		318.0				
		9 7	.789	.220		317.8				
		9 14	.794	.284						
	Mean	9 4	59.763	68.261		317.9				

Date.	Object observed.	Washington Mean Time.	Microm. I (smallest reading).	Microm. II (largest reading).	Washington Mean Time.	Position Circle. Index.	Position Circle. Ver. I.	Position Circle. Ver. II.	Eye-piece.	Remarks.
1874.		h. m.	r.	r.	h. m.	°	°	°		
Mar. 30	TITANIA	9 29	[60].964	[67].215	10 13	318.5	. .	. .	. .	Parallel, 213°.7. Setting for distances, 223° by index.
			. .	. .		318.5				
		9 59	.920	.099		319.2				
			.926	.110						
		10 10	.880	.119						
	Mean	9 53	60.922	67.136	. .	318.7				
April 4	OBERON	7 55	[59].796	[68].230	8 32.5	196.2	16.2	. .	. .	Setting for distances, 18°. Parallel by index, 302°.5; by vernier, 122°.6.
			.798	.265			15.4			
			.692	.286			15.1			
		8 12.5	.685	.332	8 40		15.2			
	Mean	8 3.8	59.743	68.278	8 36	. .	15.6			
	TITANIA	8 15	[61].299	[66].631	8 43.5	. .	69.5	. .	. .	Setting for distances, 65°. Parallel by index, 33°.5.
			.391	.690			68.8			
			.322	.678			68.8			
		8 28.5	.352	.640			68.4			
	Mean	8 21.8	61.341	66.660	. .	. .	68.9			
	Object near URANUS.	9 0	61.06	66.78	. .	. .	. .	. .	. .	Setting for distances, by vernier, 158°. Same brilliancy as OBERON and TITANIA.
13	TITANIA	7 55	[61].617	[66].491	7 45	351.0	. .	. .	. .	Weight, 2. Parallel, 213°.0. TITANIA n. p. URANUS. Observer, HOLDEN.
			.751	.527	7 48	352.1				
		8 7	.694	.438		351.5				
					7 51	350.0				
	Mean	8 1	61.687	66.489	7 48	351.2				
	OBERON	. .	. .	. .	8 28	145.4	. .	. .	. .	Seeing growing worse. Observer, C. H. F. PETERS.
					8 39	146.0				
	Mean	. .	. .	. .	8 34	145.7				
21	TITANIA	. .	. .	. .	8 55	323.1	. .	. .	. .	Weight, 1. Parallel, 31°.5. Observer, HOLDEN.
						322.0				
					9 3	320.1				
	Mean	. .	. .	. .	8 59	321.7				
	OBERON	. .	. .	. .	9 7.5	3.5	. .	. .	. .	Weight, 1. Observations extremely doubtful, on account of driving-clock performing badly. Observer, HOLDEN.
						2.4				
					9 15	3.0				
	Mean	. .	. .	. .	9 11	3.0				
29	TITANIA	7 54	60.996	67.490	8 29	120.6	. .	. .	. .	Setting for distances, 210°. Parallel by index, 210°.9; by vernier, 300°.4.
			.948	.450		121.0				
			61.012	.468		119.8				
		8 4	[60].936	.505	8 34	121.9				
					8 29	. .	209.9			
	Mean	7 59	60.973	67.478	8 31	120.6				
	OBERON	*8 13.5	61.341	67.112	8 35*	53.9	. .	. .	. .	Setting for distances, 144°. *Times by chronometer. Chronometer correction, −45ˢ.
			.378	.132	8 35*	. .	143.3			
			.320	.189		. .	142.7			
		8 26*	.345	.130		. .	143.8			
					8 39*	. .	142.5			
	Mean	8 19	61.346	67.141	8 36	. .	143.2			
May 7	OBERON	8 10	60.512	68.009	8 43	89.5	. .	. .	. .	Setting for distances, 180°. Parallel, 211°.5.
			.461	.040		90.1				
			.432	.002		89.8				
		8 25	.462	67.974	8 52	90.1				
	Mean	8 18	60.467	68.006	8 48	89.9				

Date.	Object observed.	Washington Mean Time.	Microm. I (smallest reading).	Microm. II (largest reading).	Washington Mean Time.	Position Circle. Index.	Ver. I.	Ver. II.	Eye-piece.	Remarks.
1874.		h. m.	r.	r.	h. m.	°	°	°		
May 7	TITANIA	8 27	61.181	67.308	8 44	102.0	. .	. .	. .	Setting for distances, 186° by index.
			.160	.252		102.3				
			.100	.316		103.0				
		8 38	.126	.288	8 48	103.0				
	Mean	8 32	61 142	67.291	8 46	102.6				
	[Inner satellite] . .	. .	. .	. .	. .	184.	. ..	. .	. .	One setting on inner satel'ite. Observer, HOLDEN.
8	OBERON	8 50	59.899	68.532	8 10	109.8	. .	. .	4	Setting for distances, 21°. Parallel, 31°.6. p. observed by HOLDEN; s. observed by NEWCOMB.
			.939	.536		111.5				
			.900	.562						
		9 2	.967	.595						
	Mean	8 56	59.926	68.556	. .	110.6				
					9 5	110.4	. .	. .	. .	Observer, NEWCOMB.
						112.0*	. .	. .	. .	*Half-weight.
						114.6				
					9 14	110.0				
					9 16	109.5				
						113.0				
					9 12	111.5				
	TITANIA	8 24	61.140*	67.248*	9 6.5	130.0	. .	. .	*3	Setting for distances, 48°. Through dense murky haze, making planet yellow and satellites faint. Measures of position unsatisfactory, owing to low altitude of planet in the haze. ‡ Half-weight.
			.065*	.342*		134.0‡				
			.100†	67.326†		131.8	. .	. .	†4	
		8 39±		.232†	9 15	131.1				
		8 44	.110†							
	Mean	8 36	61.104	67.287	9 10	131.4				
18	TITANIA	8 37	62.141	66.290	9 3	187.1	96.2	. .	. .	Setting for distances, 108°. Measures of position very difficult.
			.138	.306			100.2			
			.140	.358			98.5			
		8 47.5	.095	.340	9 13		98.2			
	Mean	8 42.2	62.128	66.324	9 8	. .	98.3			
	OBERON	8 50	61.361	68.064	9 6	102.0	. .	. .	. .	Setting for distances, 99°. Parallel by vernier, 128°.4; by index, 219°.1.
			.445	.072		99.7				
			.440	.044		99.7				
		9 2	.362	.100	9 15	101.1				
	Mean	8 56	61.402	68.070	9 10	100.6				
19	OBERON	8 17	61.353	66.969	8 46	. .	. .	132.5*	. .	Setting for distances, 134°. *Weight for p. = 4; weight for s. = 2. † At $8^h\ 24^m.5$.
			.367	[67].050†				132.9*		
			.445	[66].924				133.6*		
		8 30	.470	[67].035	8 54.5			134.2*		
	Mean	8 24	61.409	66.994	8 50	. .	. .	133.3		
	TITANIA	8 33.5	62.028	66.441	. .	59.5	. .	. .	. .	Setting for distances, 152°. Weight of last three pairs of distances, 4; of first pair, 2. Weight of angles of position, 4. *Good.
			.008*	.459*	8 48		148.5			
			.018	.436	8 53		148.3			
		8 42	.005	.432	8 56		148.7			
							149.5			
	Mean	8 37.8	62.015	66.442	8 52	. .	148.8			
	UMBRIEL(?) . . .	9 17	. .	66.466	9 3.5	136.3	. .	. .	. .	Observer, C. H. F. PETERS.
		9 23.5	62.201			133.0				
			.338		9 11	134.0				
		9 28		.241						
				.432						
		9 34	.073							
	Mean	9 25.6	62.204	66.380	9 7	134.4				
	Object near URANUS.	. .	. .	. .	9 40	12.8	. .	. .	. .	Fainter than UMBRIEL (?). Seen by both PETERS and HOLDEN. Observer, PETERS. [Both ARIEL and UMBRIEL were close to the object observed for UMBRIEL.]
						12.0				
					9 43	14.0				
	Mean	. .	. .	. .	9 42	12.9				

Date.	Object observed.	Washington Mean Time.	Microm. I (smallest reading).	Microm. II (largest reading).	Washington Mean Time.	Position Circle. Index.	Ver. I.	Ver. II.	Eye-piece.	Remarks.
1874.		h. m.	r.	r.	h. m.	°	°	°		
May 21	OBERON	8 29	60.178	68.232	8 57	98.4				
			.104	.248		98.8				
			.156	.226		97.7				
		8 43	.171	.176	9 6	98.2				
	Mean	8 36	60.152	68.220	9 2	98.3				
	TITANIA	8 45	61.057	67.286	8 59	125.5	. .	. .	. .	Setting for distances, 30°. Parallel, 208°.9.
			.098	.302		123.3				
			.140	.347		124.6				
		8 55	60.986	.346	9 8	125.0				
	Mean	8 50	61.070	67.320	9 4	124.6				
22	OBERON	8 19	59.998	68.601	8 52	115.2	. .	. .	. .	Weight, 3. Setting for distances, 22°.
			.862	.600		115.6				
			.906	.570		115.5				
		8 32	.942	.547	8 58	116.0				
	Mean	8 26	59.927	68.580	8 55	115.6				
	TITANIA	8 34	61.758	66.694	9 2	159.5*	. .	. .	. .	Setting for distance, 61°; Parallel, 208°.9. Measures of position difficult. *Weight, 1.
			.667	.642		159.0				
			.762	.633	6	158.8				
		8 47	.804	.686	8	157.2				
		8 51	.808	.600						
	Mean	8.44	61.760	66.651	9 9	158.6				
26	TITANIA	8 45	61.589	67.036	. .	. .	33.6			
			.552	[66].905						
			.570	[66].949						
		8 53	.562	[66] 940						
	Mean	8 49	61.568	66.958						
	OBERON	9 2	61.300	67.240	8 55	. .	. .	154.1	. .	Planet very low. Weight, 2. Parallel by vernier I, 307°.0.
				.069				152.2		
								153.7		
					9 0			153.8		
	Mean	. .	61.300	67.154	8 58	. .	. .	153.4		
June 13	*v Scorpii*	. .	. .	. .	. .	. .	. .	. .	. .	Suspect an elongation in the direction north and south.—NEWCOMB.
	μ^2 *Herculis*, B and C .	. .	. .	. .	. .	343.5				
						338.0				
						343				
						339				
	Mean	. .	. .	. .	. .	349				
	γ Lyræ	. .	62.064	66.662	. .	. .	. .	. .	. .	Quadruple distances. Parallel by vernier, 93°.7.
			.075	.702			246.8			
							245.5			
	Mean		62.070	66.682			245.7			
							245.4			
			63.090	65.659	. .	. .	. .	. .	. .	Double distances.
			.100	.648						
	Mean	. . .	63.095	65.654	. .	. .	245.9			
	Annular nebula in *Lyræ*									
	[Extreme length] .	. .	56.510	72.155	. .	. .	. .	. .	. .	Setting for this distance, 123°.
	[Minor axis] . .	. .	58.260	69.976						
17	Companion of μ^2 *Herculis*.	. .	. .	. .	9	71.0	. . .	. .	4	Weight, 2. Parallel by vernier I, 273°.3. Parallel by index, 4°.2.
						81.1				
						80.7				
						73.0				
						69.8				
	Mean	. .	. .	. .	. .	75.1				

Date.	Object observed.	Washington Mean Time.	Microm. I (smallest reading).	Microm. II, (largest reading).	Washington Mean Time.	Position Circle. Index.	Ver. I.	Ver. II.	Eye-piece.	Remarks.
1874.		h. m.	r.	r.	h. m.	°	°	°		
June 22	μ^2 *Herculis*	. .	.925	.062	8 45	275.2	. .	. .	6 A	Stars finely separated; southernmost star the fainter.
			.934	.078		269.0				
			.919	.067		273.7				
						270.1				
						273.7				
	Mean	. .	.926	.069		272.3				
	ν Scorpii, A and B. .	. .	. .	. .	9 45	110.8	. .	. .	6 A	South star the larger. Parallel, 207°.3.
						112.2				
						113.8				
						111.5				
	Mean	. .	. .	. .	. .	112.1				
24	*α Lyræ* (distant companion).	. .	. .	. .	. .	143.1	. .	. .	. .	Weight, 4. Parallel, 207°.4. Observer, HOLDEN.
						143.2				
						143.3				
	Mean	. .	. .	. .	. .	143.2				
26	*α Lyræ* (distant companion).	. .	59.622?	69.145	. .	197.0	. .	. .	. .	Parallel, 81°.2. Observer, HOLDEN.
			.545	.287		197.6				
			.661	.201		196.6				
	Mean	. .	59.609	69.211	. .	197.1				
July 6	μ^2 *Herculis*	. .	.277	.445	. .	153	. .	. .	. .	Weight, 4. Parallel by index, 82°.8.
			.271	.427		149				
			.278	.440		148				
						150				
	Mean	. .	.275	.437	. .	150.0				
13	HYPERION (?) . . .	13 2	54.368	74.247	13 10	21.2	. .	. .	. .	Setting for distance, 297°. Parallel, 63°.8.
						22.0				
	Mean	. .	. .	. .	. .	21.6				
15	HYPERION (?) . . .	13	. .	. .	. .	. .	. .	. .	. .	Estimated position angle, 165°.
17	*ν Scorpii*									
	A and B . . .	. .	. .	. .	. .	. .	. .	. .	. .	Observer, HOLDEN. South star the larger; image bad.
	A to $\frac{C+D}{2}$. . .	. .	. .	. .	. .	356.4	. .	. .	. .	Weight, 3. Parallel, 64°.0.
						355.8				
						355.2				
	Mean	. .	. .	. .	. .	355.8				
	C and D . . .	. .	. .	. .	. .	289.0	. .	. .	. .	Weight, 4.
						288.7				
						291.0				
	Mean	. .	. .	. .	. .	289.6				
19	Satellite of NEPTUNE.	. .	. .	. .	15 35	198.5*	. .	. .	. .	No distance measured. Satellite hard to see, being only 6″ to 7″ from the planet. *Weight, 1. †Weight, 2. Parallel = 105°.1.
						194.6†				
						195.4†				
					15 45	199.5*				
	Mean	. .	. .	. .	15 40	196 3				
29	Satellite of NEPTUNE.	15 13	62.995	65.755	15 33	324.1	. .	. .	. .	Setting fo distances, 240°. *Weight of distances 2.
			.869	.745		322.2				
			.925	.696		321.8				
			.959	.725		324.5				
		15 29.5	.916	.744	15 42	324.7				
	Mean	15 21.2	62.933	65.733	15 38	323.5				
		15 45	62.930	65.766	. .	. .	. .	. .	. .	Setting for distances, 235°. Parallel, 284°.7. Satellite faint, owing to bright moonlight and haze. Weight of distances = 3
			.929	.721						
			.915	.801						
			.894	.756						
		16 0	.918	.765						
	Mean	15 52	62.917	65.762						

Date.	Object observed.	Washington Mean Time.	Microm. I (smallest reading).	Microm. II (largest reading).	Washington Mean Time.	Position Circle. Index.	Position Circle. Ver. I.	Position Circle. Ver. II.	Eye-piece.	Remarks.
1874.		h. m. s.	r. Star.	r. Comet.	h. m.	°	°	°		
July 30	BORELLY'S *Comet* . .	18 22 16.1*	. .	. .	. .	. .	. .	. .	. .	Comet follows star (Oeltzen's Arg. 13453-4) 2^m $36^s.37$ by three comparisons in right ascension. *Time by *sidereal* clock. Correction, +$21^s.2$.
	BORELLY'S *Comet* . .	9 28 8‡	66.754	77.860	. .	. .	. .	. .	. .	Telescope east of pier. Micrometer head toward north. Star precedes, and is south of comet. ‡Times by watch; watch-correction, -7^s.
		32 0‡	66.957	.485						
		32 30‡	. .	79.020						
		9 36 50‡	67.217	79.772						
	BORELLY'S *Comet* . .	9 32 17.3†	. .	. .	. .	. .	. .	. .	. .	Comet north of same star 1′ 57″.4 (three comparisons). †Washington mean time. At 9^h 48 $21^s.2$, Washington m. t., Comet *follows* star 2^m $36^s.37$, and is *north* of it 2′ 27″.4.
	Satellite of NEPTUNE.	h. m. 15 8.5	62.809	65.869	15 24.5	344.6	. .	. .	. .	Setting for distances, 253°.
			.808	.863		343.8				
			.819	.801		345.5				
			.804	.864		344.1				
		15 20	.855	.859	15 33	343.3				
	Mean	15 14.2	62.819	65.851	15 29	344.3				
		15 35	.852	.848						
			.868	.850						
			.876	.830						
			.818	.850						
		15 49	.858	.841						
	Mean	15 42	62.854	65.844	. .	. .	. .	. .	. .	Parallel, 284°.6.
Aug. 4	γ *Lyræ*	. .	63.054	65.640	. .	. .	. .	. .	. .	Double distances.
			.052	.714						
			.018	.735						
	Mean	. .	63.041	65.696						
		. .	61.835	66.781	. .	. .	. .	. .	. .	Quadruple distances.
			.830	.951						
			.840	.873						
	Mean	. .	61.835	66.868						
11	Satellite of NEPTUNE.	15 31	62.969	65.739	15 8	348.9	. .	. .	. .	Parallel, 282°.4. Observer, HOLDEN.
		15 45	63.100	.728	15 11	352.1				
		15 47.5	62.938	.730	15 14	353.1†	. .	. .	. .	†Good.
						350.1				
					15 17.5	350.2				
	Mean	15 42.2	63.002	65.732	15 13	350.9				
13	Satellite of NEPTUNE.	13 59	62.744	66.002	13 33	. .	. .	128.9	. .	Weight, 1. Passing clouds, and distances very hard to measure. Whole sky hazy and satellite very faint. Parallel by vernier II, 82°.6. Observer, HOLDEN. *Weight double that of three preceding measures.
		14 26	.668	.	13 38			127.0		
		31		65.979	13 40			128.2		
				[66].045	13 42			128.8*		
		14 49	.582		13 45			130.0*		
					13 46			130.8*		
					13 51			129.8*		
								130.1*		
	Mean	14 27	62.665	66.009	13 42			129.5		
17	Satellite of NEPTUNE.	. .	. .	. .	23 43*	. .	. .	149.0	. .	Observer, HOLDEN. Satellite difficult to measure, disappearing when near illuminated wire. Parallel by vernier II, 76°.2. *Sidereal time. Co-incidence of wire A and mic wire = $64^r.365$.
					23 49			147.0		
					23 52			145.0		
					23 55			146.0		
					24 0			145.2		
		24 19*	63.122		24 8			143.6		
	Mean	. .	. .	. .	23 59			146.0		
					24 36	. .	. .	146.0		
					24 40			149.0		
					24 45			149.5*	. .	*Good.
	Mean	. .	. .	. .	24 40			148.2		

Date.	Object observed.	Washington Mean Time.	Microm. I (smallest reading).	Microm. II (largest reading).	Washington Mean Time.	Position Circle. Index.	Ver. I.	Ver. II.	Eye-piece.	Remarks.	
1874.		h. m.	r.	r.	h. m.	°	°	°			
Aug. 19	a^2 *Capricorni*, B and C	. .	. .	. .	. .	. .	. .	108.8	. .	This star larger than the preceding of the double companion. Weight of angle of position, 2.	
			.199	.536				107.2			
			.160	.518				107.2			
			.158	.505				105.5			
								106.5			
	Mean	. .	.172	.520	. .	. .	. .	107.0			
	A and $\frac{B+C}{2}$	. .	. .	. .	. .	. .	. .	14.0	. .	Image of large star very bad. Parallel by vernier II, 74°.6; by index, 344°.5. Weight of angle of position, 1.	
								15.0			
								16.0			
								15.0			
								15.3			
	Mean	. .	. .	. .	. .	. .	. .	15.1			
	Satellite of NEPTUNE.	0 7.5*	. .	66.044	23 42*	32.0†	. .	. .	. .	Observer, HOLDEN. Weight of angle of position, 4. *Sidereal time. †Poor. ‡Sky became quite hazy and satellite difficult to see after $23^h\ 57^m$. §Weight, 1.	
		0 25.	62.615†		23 45	34.0					
		0 33.	.488†		23 47	34.2					
		0 36.5	.618		23 49.5	34.1					
		0 38.5		.081	23 56	34.0					
				.105							
		0 47.5	.585								
		0 56.5	.596								
		0 58.5		.080§	23 58.5	33.0					
				.035§							
		1 5.0	.642†								
	Mean	0 41	62.590	66.069	23 50	33.6					
27	Triple Star in Trifid Nebula G. C. 4355. A and B.	. .	. .	. .	. .	. .	59.1*	. .	. .	. .	Parallel, 180°.3. *Weight, 4.
							59.1*				
	Mean	. .	. .	. .	. .	. .	59.1				
	A and C.	. .	. .	. .	. .	. .	68.3†	. .	. .	. .	†Weight, 3.
							70.7†				
							70.8†				
	Mean	. .	. .	. .	. .	. .	69.9				
	B and G.	. .	. .	. .	. .	. .	78.0‡	. .	. .	. .	‡Weight, 2.
							74.0‡				
	Mean	. .	. .	. .			76.0				
	B and E.	. .	.058	.588	. .	166.5					
			.045	.590		169.8					
	Mean	. .	.052	.589		168.2					
	a^2 *Capricorni* A to $\frac{B+C}{2}$	. .	. .	. .	. .	125.1	. .	. .	. .	Image of principal star bad. Weight, 3. Observer, HOLDEN.	
						126.8					
						124.5					
						125.0					
						124.8					
	Mean	. .	. .	. .	. .	125.2					
28	ξ *Herculis*	. .	.209	.432	. .	. .	. .	. .	. .	Weight, 1.	
						290.6	. .	. .	. .	Weight, 3. Position angle nearly 180°. The distance hardly more than a rough estimate; the angles comparatively good.	
						295.5					
						291.7					
						293.3					
	Mean	. .	. .	. .	. .	292.8					
	Σ 2315 $\alpha = 18^h\ 18^m$ $\delta = +27°.3$	. .	. .	. .	. .	203	. .	. .	. .	Excessively close; distance estimated less than ⅛ of a second. p. = 270° ± (est.)	
						196					
						207					
	Mean	. .	. .	. .	. .	202					

Date.	Object observed.	Washington Mean Time.	Microm. I (smallest reading).	Microm. II (largest reading).	Washington Mean Time.	Position Circle. Index.	Ver. I.	Ver. II.	Eye-piece.	Remarks.
1874.		h. m.	r.	r.	h. m.	°	°	°		
Aug 28	a^2 *Capricorni* . . .	. .	.210	.460*	. .	34.5	. .	. .	. .	*Uncertain.
						30.1				
						30.2				
	Mean	. .	. .	. .	. .	31.6				
29	Σ 2215	. .	.249	.441	. .	157.2*	. .	. .	. .	Parallel, 0°.1. *Weight, 2. †Weight, 4.
	$a = 17^h\ 40^m$		.241	.420		152.4†				p. = 270° ± .
	$\delta = +17°\ 48'$		.236	.415		155.3†				
						151.7†				
	Mean	. .	.242	.425	. .	153.7				
	Σ 2315	. .	. .	. .	. .	193.5	. .	. .	. .	Excessively close. Elongation barely perceptible.
	$a = 18^h\ 19^m$					198.0				
	$\delta = +27°\ 20'$					197.8				
						199.0				
	Mean	. .	. .	. .	. .	197.1				
	72 *Ophiuchi* . . .	. .	. .	. .	. .	. .	. .	. .	. .	Examined carefully, but no companion visible except an extremely faint one 26′, *preceding* p = 292° by one estimate.
	Rhea	10 16	57.675	71.098	. .	162.9	. .	. .	. .	Position about 280°.
		10 22	.650	.048	9 45	162.5				
						162.4				
	Mean	10 19	57.662	71.073	. .	162.6				
	Tethys	10 25	61.825	66.970	9 48	151.8	. .	. .	. .	Position about 300°.
		29	.821	.919		150.5				
	Mean	10 27	61.823	66.944	. .	151.2				
	Enceladus . . .	10 32	61.013	67.668	9 55	183.0	. .	. .	. .	Position about 270°.
		10 38	[60].971	.701		180.8				
					9 58	181.8				
	Mean	10 35	60.992	67.684	9 56	181.9				
	Dione	10 40	59.266	69.384	. .	163.1	. .	. .	1	Position about 100°.
		10 45	.367	.344	10 3	163.0				
						163.6				
	Mean	10 42	59.316	69.364		163.2				
	Titan	10 48	58.395	70.290	10 7	84.8	. .	. .	. .	Position about 180°.
		10 54	.373	.343		85.1				
					10 12	84.4				
	Mean	10 51	58.384	70.316	10 10	84.8				
31	ξ *Herculis*	. .	.188	.471*	. .	296.2†	. .	. .	. .	*Weight of distances = 2. †Weight, 3.
			.165	.429		205.0†				
			.172	.436		290.1†				
						293.0†				
	Mean	. .	.175	.445		293.6				
	Σ 2173	. .	.188	.424*	. .	122.0†	. .	. .	. .	Position = 350° ± . *Weight of distance = 3. †Weight, 4.
			.210	.408		123.2†				
						120.5†				
	Mean	. .	.199	.416	. .	121.9				
	72 *Ophiuchi* . . .	. .	. .	. .	. .	. .	. .	. .	. .	"The images being very fine, 72 *Ophiuchi* was carefully scrutinized without seeing any close companion."
	Σ 2422	. .	.198	.414	. .	172.1	. .	. .	. .	Position = 90° ± .
			.212	.412		169.2				
						169.8				
						172.5				
	Mean	. .	.205	.413	. .	170.9				
	Titan	9 39*	50.644	77.945	9 11*	190.2	. .	. .	3	Weight, 4. Parallel, 359°.0. *Correction of chronometer, +1m.
			.673	.945		190.4				
		9 50	.650	.978	9 16	190.4				
	Mean	9 46	50.656	77.956	9 14	190.3				

Date.	Object observed.	Washington Mean Time.	Microm. I (smallest reading).	Microm. II (largest reading).	Washington Mean Time.	Position Circle. Index.	Ver. I.	Ver. II.	Eye-piece.	Remarks.
1874.		h. m.	r.	r.	h. m.	°	°	°		
Aug. 31	RHEA	9 55*	56.365	72.203	9 18.5‡	169.4	. .	. .	3	*Correction of chronometer, Aug. 31, = + 1m.
		10 1	.420	.189		169.0				
					9 23	169.1				
	Mean	9 59	56.392	72.196	9 22	169.2				
	TETHYS	10 4	62.638	65.974	9 25	129.6				
		10 9	.656	.972		128.9				
					9 29	128.5				
	Mean	10 8	62.647	65.973	9 28	129.0				
	DIONE	10 10	61.536	67.095	9 32	32.2				
		10 16	.537	.094		32.6				
					9 35	32.2				
	Mean	10 14	61.536	67.094	9 34	32.3				
	ENCELADUS ?	10 27	61.375	67.310	10 20	184.4				
		10 32	.325	.319		183.8				
					10 24	183.9				
	Mean	10 30	61.350	67.314	10 23	184.0	. .	. .	. .	Parallel, 359° 0.
Sept. 1	λ *Ophiuchi*	. .	.123	.488	. .	55.1	. .	. .	. .	Distances quite satisfactory. p. = 33.7.
			.144	.484		54.3				
						57.0				
						55.2				
	Mean	. .	.134	.486	. .	55.4				
	Σ 2173	. .	.178*	.412*	. .	118.2	. .	. .	. .	Very unsteady. *Weight, 1. †Weight, 2. p. = 280° ±.
			.212*	.423*		116.3				
						123.1*				
						120.2*				
	Mean	. .	.195	.418	. .	118.7				
	Σ 2422	. .	.222*	.412*	. .	174.0	. .	. .	. .	*Weight, 3. †Weight, 4. p. = 64° ±.
			.226*	.406*		171.8				
						172.0				
	Mean	. .	.224	.409	. .	172.6				
	1 *Delphini*	. .	.244	.385	. .	98.2	. .	. .	. .	p. = 18° ±.
			.252	.395		99.0				
						101.0				
	Mean	. .	.248	.390	. .	99.4				
	TITAN	9 31*	47.136	80.521	9 21*	0.3	. .	. .	. .	*Chronometer correction, + 1m.5.
		9 37	.082	.470		0.1				
					9 26	0.1				
	Mean	9 35	47.109	80.496	9 25	0.2				
2	λ *Ophiuchi*	. .	.110*	.484‡	. .	54.2*	. .	. .	3	*Weight, 2.
			.120*	.472‡		55.9*				
						54.1*				
	Mean	. .	.115	.478	. .	54.7				
	S. W. B. 139—O Σ 368.	. .	.100	.525	. .	. .	. .	. .	. .	Quadruple distance.
			.219	.375	. .	127.0				
			.225	.381		126.5	. .	. .	. .	Double distance.
						128.2				
	Mean	. .	.222	.378	. .	127.2	. .	. .	. .	Only half-weight to quadruple distance.
	Σ 2556	. .	.240	.369	. .	280.4	. .	. .	. .	Double distance; p. = 180° ±, I think, but the magnitudes are very nearly the same.
			.139	.441	. .	280.9	. .	. .	. .	Quadruple distance.
					. .	283.5				
	Mean	. .	. .	. .		281.6				

Date.	Object observed.	Washington Mean Time.	Microm. I (smallest reading).	Microm. II (largest reading).	Washington Mean Time.	Position Circle. Index.	Ver. I.	Ver. II.	Eye-piece.	Remarks.
1874.		h. m.	r.	r.	h. m.	°	°	°		
Sept. 2	TITAN	9 23	45.885	82.752	8 53	172.8				
		9 29	933	.721		172.9				
					8 58	172.8				
	Mean	9 26	45.909	82.736	8 56	172.8				
	RHEA	9 33	56.233	72.331	9 3	175.8				
		9 36	.257	.314		175.7				
					9 6	175.5				
	Mean	9 34	56.245	72.322	9 4	175.8				
	DIONE	9 39	58.579	70.026	9 8	169.3				
		9 43	.616	[69].938	9 9	168.8				
	Mean	9 41	58.598	69.992	9 8	169.0				
	TETHYS	9 45	62.909	65.684	9 12	76.9				
		9 49	.936	.670	9 14	74.4				
	Mean	9 47	62.922	65.677	9 13	75.6				
	MIMAS	10 11	61.440	67.134	9 52	174.9	. .	. .	. .	MIMAS passed Ansa about 10h.4.
			.462	.218*	9 55	173.8	. .	. .	. .	*Half-weight.
	Mean	. .	61.451	67.162	9 54	174.4				
	ENCELADUS	10 3	62.017	66.603	9 58	197.6	. .	. .	. .	Parallel, 179°.13.
		10 7	.005	.634	9 59	195.8				
	Mean	10 5	62.011	66.619	9 58	196.7				
3	TITAN	8 46	47.300	81.335	8 23	165.1	. .	. .	. .	Correction to chronometer = −1m.0.
		8 52	.305	.305		165.0				
					8 28	165.1				
	Mean	8 48	47.303	81.320	8 25	165.1				
	DIONE	8 58	59.766	68.921	8 30	187.0				
		9 4	.680	.885	8 33	186.9				
	Mean	9 0	59.723	68.903	8 31	187.0				
	RHEA	9 7	60.483	68.015	8 35	136.7				
		9 13	.595	.006	8 39	136.1				
	Mean	9 9	60.539	68.010	8 36	136.4				
	TETHYS	9 17	62.651	65.935	8 42	56.0	. .	. .	. .	Weight, 2. Images generally *very* bad, but occasionally moments of moderately fine seeing, when bisections of weight 2 could be made.
		9 24	.662	.935	8 44	54.6				
	Mean	9 20	62.656	65.935	8 42	55.3				
	Satellite of NEPTUNE.	13 22	62.604	66.040	13 47	52.9				
			.630	[65].965		53.0				
			.610	.982		52.4				
			.610	.976		54.0				
		13 44	.628	.997	13 57	51.4				
	Mean	13 32	62.616	65.992	13 51	52.7				
		13 59	.605	.986						
			.620	.952						
			.607	.995						
			.615	.968						
		14 13	.615	.012						
	Mean	14 5	62.612	65.983	. .	. .	. .	. .	. .	Parallel, 179°.15 ±.
5	Satellite of NEPTUNE.	13 57	63.190	65.466*	14 17	34.3	. .	. .	. .	*Weight of distances = 4.
			.178	.408		33.8				
			.214	.450		32.2				
			.180	.439		34.2				
		14 14	.189	.436	14 25	33.6				
	Mean	14 06	63.190	65.436	14 21	33.6				

Date.	Object observed.	Washington Mean Time.	Microm. I (smallest reading).	Microm. II (largest reading).	Washington Mean Time.	Position Circle. Index.	Ver. I.	Ver. II.	Eye-piece.	Remarks.
1874.		h. m.	r.	r.	h. m.	°	°	°		
Sept. 5	Satellite of NEPTUNE.	14 29	.149*	65.488*	. .	. .	. .	. .	. .	Clouds. *Weight, 3.
		14 35	.110*	.436*						
	Mean	14 32	63.130	65.462						
7	P. XVIII, 132. . .	. .	.244	.372	. .	96.9	. .	. .	. .	p. = 0° ±.
			.238	.372		94.2				
						96.2				
	Mean	. .	.241	.372	. .	95.8				
	Σ 2402	. .	.192	.410	. .	63.4	. .	. .	. .	p. = 200° ±.
			.188	.410		62.7				
						64.2				
						63.2				
	Mean		.190	.410	. .	63.4				
	χ Aquilæ	. .	. .	. .	11.5	8.2	. .	. .	. .	Images very bad and distance impossible to measure; distance estimated, 0".8.
						13.1				
	Mean	. .	. .	. .	. .	10.9				
9	Σ 2315	. .	.261	.341	. .	198.2	. .	. .	. .	Weight, 4.
			.260	.339		201.4				
						198.1				
						200.0				
	Mean	. .	.260	.340	. .	199.4				
	P. XVIII, 132. . .	. .	.238	.368	. .	95.8	. .	. .	. .	p. = 0° ±. Stars equal. Weight, 4.
			.242	.367		97.9				
						95.0				
	Mean	. .	.240	.368	. .	96.2				
	Σ 2402	. .	.193	.414	. .	65.1	. .	. .	. .	Magnitudes, 7.0, 7.5. p. = 180° ±.
			.180	.415		64.5				
						64.2				
	Mean	. .	.186	.414	. .	64.6				
	O Σ 371.	. .	.205	.400	. .	115.0	. .	. .	. .	Weight, 3. Magnitudes, 6.2, 6.5.
			.200	.392		115.2				
						115.1				
	Mean	. .	.202	.396	. .	115.1				
	Σ 2556	. .	.242	.354	. .	101.0	. .	. .	. .	Weight, 3. Magnitudes, 7.5, 8.0.
			.241	.359		100.1				
						102.9				
	Mean	. .	.242	.356	. .	101.3				
	O Σ 384.	. .	.195	.416	. .	75.6	. .	. .	. .	Weight, 4. Magnitudes, 6.5, 7.0.
			.191	.388		74.7				
			.187	.400		75.5				
	Mean	. .	.191	.401	. .	75.3				
	Satellite of NEPTUNE.	12 42	62.645	65.995	13 7	232.4*	. .	. .	. .	*Half-weight.
			.626	.945		234.0				
			.622	.955		234.5				
		13 1	.638	.943		235.0				
					13 19	233.4				
	Mean	12 52	62.633	65.960	13 13	234.0				
		13 24	.625	65.956						
			.626	.990						
			.665	.928						
		13 40	.705	.964						
	Mean	13 32	62.655	65.960						

Date.	Object observed.	Washington Mean Time.	Microm. I (smallest reading).	Microm. II (largest reading).	Washington Mean Time.	Position Circle. Index.	Ver. I.	Ver. II.	Eye-piece.	Remarks.
1874.		h. m.	r.	r.	h. m.	°	°	°		
Sept. 10	Σ 2412	. .	.176	.456	. .	33.7	. .	. .	. .	A star of 6m, south preceding 9'. Magnitudes, 8, 8.
			.166	.442		32.3				
						34.1				
	Mean	. .	.171	.451	. .	33.4				
	Σ 2409	. .	.195	.410	. .	54.4	. .	. .	. .	Magnitudes, 8, 10.
			.203	.408		55.5				
						54.0				
						55.6				
	Mean	. .	.199	.409	. .	54.9				
	Σ 2454	. .	.210	.396	. .	37.0				
						36.2*	. .	. .	. .	* Double weight.
						34.3				
						36.9				
	Mean	. .	. .	. .	. .	36.1				
	O Σ 383	. .	.209	.387	. .	67.5	. .	. .	. .	Magnitudes, 7.7, 10; p. = 20° ±.
			.215	.390		64.4				
						63.5				
						65.5				
	Mean	. .	.212	.388	. .	65.2				
	β Delphini	. .	. .	. .	. .	76.1	. .	. .	. .	Image very bad; p. = 15° ±.
						74.3				
	Mean	. .	. .	. .	. .	75.2				
	Satellite of Neptune.	. .	. .	. .	12 41	90.4*	. .	. .	. .	Atmosphere suddenly became very bad, so that the satellite could no longer be seen. * Weight, 2. † Weight, 1.
					12 46:	93.3†				
	Mean	. .	. .	. .	12 44	91.4				
12	Σ 2409	. .	.198	.399	. .	54.3	. .	. .	4	Weight, 4. Magnitudes, 7, 8½.
			.198	.391		53.2				
						55.2				
	Mean	. .	.198	.395	. .	54.2				
	Σ 2454	. .			. .	38.8	. .	. .	. .	Magnitudes, 7, 9.
			.213	.382		38.9				
			.204	.380		39.0				
	Mean	. .	.208	.381	. .	38.9				
	S. W. B. 139=O Σ 368	. .	.212	.373	. .	129.0	. .	. .	6 A	Magnitudes, 7, 7.7.
			.224	.369		128.8				
						130.6				
	Mean	. .	.218	.371	. .	129.5				
	χ Aquilæ	. .	.256	.368	. .	10.9	. .	. .	. .	Magnitudes, 6, 8.
			.262	.357		14.2				
						12.0				
		. .	.259	.362	. .	12.4				
	β Delphini	. .	.252	.354	. .	76.2	. .	. .	. .	Magnitudes, 4½, 5½.
			.258	.355		74.4				
						78.5				
	Mean	. .	.255	.354	. .	76.4				
18	Satellite of Neptune.	13 7*	62.715	65.850	13 26*	59.5	. .	. .	6 A	* Chronometer correction, −1m.5.
			.758	.849		60.9				
			.718	.856		59.1	. .	. .	. .	[Weight, 3.]
		13 21	.760	.855		59.6				
					13 36	60.3				
	Mean	13 12	62.738	65.852	13 30	59.9				

Date.	Object observed.	Washington Mean Time.	Microm. I (smallest reading).	Microm. II (largest reading).	Washington Mean Time.	Position Circle. Index.	Ver. I.	Ver. II.	Eye-piece.	Remarks.
1874.		h. m.	r.	r.	h. m.	°	°	°		
Sept. 18	Satellite of NEPTUNE.	13 40*	62.761	65.890	. .	. .	. .	. .	6 A	*Chronometer correction = 1m.5.
			.750	.846						
			.755	.868						
		13 52	.775	.852						
		Mean 13 45	62.760	65.864						
19	O Σ 365	. .	.984	.622	. .	185.5	. .	. .	. .	Weight, 2. Magnitudes, 7, 9½.
	O Σ 383	. .	.204	.404	. .	67.8	. .	. .	. .	Weight, 4. Magnitudes, 7.0, 8.2.
			.215	.403		66.2				
						69.5				
		Mean	.210	.404		67.8				
21	??	. .	.206*	.370*	. .	63.6†	. .	. .	. .	Magnitudes, 6, 6. Images very much diffused; star hardly ever divided at all. *Weight, 1. † Weight, 2.
	$\alpha = 17^h\ 46^m$		.210*	.375*		61.8†				
	N. P. D. = 71° 38′					67.2†				
						62.4†				
		Mean	.208	.372		63.8				
	Σ 2367	. .	. .	. .	. .	198.5	. .	. .	. .	Distance could not be measured with such bad images; probably about 0″.3. Magnitudes, 7, 7.
						195.0				
						208.0				
		Mean	. .	. .	. .	200.5				
	O Σ 375	. .	.218*	.362*	. .	124.2*	. .	. .	. .	*Weight, 1. † Weight, 2.
						125.1†				
						122.5*				
		Mean	. .	. .	. .	124.2				
	O Σ 384	. .	.187*	.403*	. .	71.5†	. .	. .	. .	Magnitudes, 7, 7½. *Weight, 1. † Weight, 3. p. = 180° ±.
			.182*	.400*		73.6†				
						72.5†				
		Mean	.184	.402		72.5				
	O Σ 383	. .	.219	.365	. .	63.8*	. .	. .	. .	Magnitudes, 7, 9. *Weight, 1. † Weight, 2.
			.212	.355		60.9†				
						60.4†				
		Mean	.216	.360		61.3				
	β Delphini	. .	. .	. .	. .	75.0	. .	. .	. .	No distance possible.
						75.8				
						71.0				
						77.5				
		Mean	. .	. .	. .	74.8				
	16 *Vulpeculæ*	. .	.228	.366	. .	176.4*	. .	. .	. .	Magnitudes, 5 7, 6.5. *Weight, 3. p. = 90 ±.
			.229	.366		177.6*				
						177.0*				
		Mean	.228	.366		177.0				
	O Σ 418	. .	.184	.389	. .	159.8	. .	. .	. .	Weight, 3. Magnitudes, 7, 7.3.
			.184	.400		157.9				
						158.4				
		Mean	.184	.394		158.7				
	??	. .	.212	.380	. .	26.5	. .	. .	. .	Weight, 3. Magnitudes, 7.5, 8.5. p. = 250 ±.
	$\alpha = 21^h\ 35^m$		.220	.374		25.2				
	N. P. D. = 61° 13′					25.7				
		Mean	.216	.377		25.8				
	S. W. B. 64 = Σ 2793	. .	.240	.364	. .	23.1	. .	. .	. .	Magnitudes, 7, 7.5.
			.234	.365		19.1				
						26.2				
						28.6				
		Mean	.237	.364		24.3				

Date.	Object observed.	Washington Mean Time.	Microm. I (smallest reading).	Microm. II, (largest reading).	Washington Mean Time.	Position Circle. Index.	Ver. I.	Ver. II.	Eye-piece.	Remarks.
1874.		h. m.	r.	r.	h. m.	°	°			
Sept. 21	Satellite of NEPTUNE.	10 49	62.716	65.877	11 5	237.9				
			.715	.890		237.8				
			.711	.909		237.8				
		11 3	.725	.897		238.9				
					11 13	237.3				
	Mean	10 56	62.717	65.893	11 9	238.0				
		11 16	.699	.900						
			.708	.875						
			.709	.859						
		11 28	.698	.890						
	Mean	11 22	.704	.881						
22	Σ 2367	. .	.254	.327	. .	24.5*	. .	. .	. .	Distance very uncertain, as star could not be divided with magnifying power 20. Magnitudes, 7, 7. * Weight, 3. † Double weight.
						20.7*				
						†21.7*				
	Mean	. .	. .	. .	. .	22.2				
	O Σ 375	. .	.224	.352*	. .	125.5†	. .	. .	. .	Magnitudes, 7, 8. * Weight, 1. † Weight, 3.
			.227	.350*		126.3†				
						124.0†				
	Mean	. .	.226	.351	. .	125.3				
	O Σ 382	. .	.245	.335	. .	88.5	. .	. .	. .	Magnitudes, 6.5, 7.
			.250	.336		91.6				
						90.3				
	Mean	. .	.248	.336	. .	90.1				
	TETHYS	9 6*	61.507	67.038	8 31*	47.7	. .	. .	. .	*Chron. corr., − 0m.5.
		9 10	.527	.088		47.2				
					8 35	47.4				
	Mean	9 8	61.517	67.063	8 32	47.4				
	DIONE	9 13	60.920	67.625	8 37	51.2				
		9 18	.936	.630		51.1				
					8 42	50.9				
	Mean	9 15	60.928	67.628	8 39	51.1				
	RHEA	9 21	57.740	70.902	8 47	186.2				
		9 26	.750	.837		185.8				
						185.5				
	Mean	9 23	57.745	70.870	. .	185.8				
	ENCELADUS	9 28	61.069	67.512	8 52	182.0				
		9 33	.094	.486		182.5				
					8 56	183.1				
	Mean	9 30	61.082	67.499	8 54	182.5				
	TITAN	9 35	58.312	70.216	8 59	63.5	. .	. .	. .	Parallel, 179°.06 ±.
		9 40	.360	.235		63.0				
					9 4	63.4				
	Mean	9 37	58.336	70.226	9 1	63.3				
23	O Σ 368	. .	.214	.398	. .	235.9	. .	. .	. .	Weight, 4. Magnitudes, 7.5, 8.
			.213	.399		234.8				
						236.0				
	Mean	. .	.214	.398	. .	235.6				
	O Σ 382	. .	.266	.350	. .	91.7	. .	. .	. .	Magnitudes, 7.3, 7.3.
			.267	.345		94.0*	. .	. .	. .	* Half-weight.
						94.2				
	Mean	. .	.266	.348	. .	93.2				

Date.	Object observed.	Washington Mean Time.	Microm. I (smallest reading).	Microm. II (largest reading).	Washington Mean Time.	Position Circle, Index.	Position Circle, Ver. I.	Position Circle, Ver. II.	Eye-piece.	Remarks.
1874.		h. m.	r.	r.	h. m.	°	°	°		
Sept. 23	ENCELADUS	8 29	61.645	66.935	7 56	158.9				
		8 36	.634	.905	8 0	157.5				
					8 1	157.8				
	Mean	8 32	61.640	66.920	7 59	158.1				
	DIONE	8 37	61.795	66.800	8 3	134.2				
		8 43	.851	.800	8 6	133.2				
					8 8	133.4				
	Mean	8 40	61.823	66.800	8 6	133.6				
	RHEA	8 45	58.239	70.413	8 10	157.2				
		8 52	.184	.370	8 12	156.9				
					8 14	156.8				
	Mean	8 48	58.212	70.392	8 12	157.0				
	TETHYS	8 54	61.119	67.525	8 17	10.9				
			.071	.516	8 19	11.3				
		9 6	.030	.560	8 21	11.5				
	Mean	9 0	61.073	67.534	8 19	11.2				
	TITAN	9 8	54.065	74.475	8 22	22.2				
			.068	.531	8 24	21.9				
		9 14	.024	.461	8 26	21.9				
	Mean	9 11	54.052	74.489	8 24	22.0				
	A. C. 16	. .	.256	.348	. .	26.7	. .	. .	. .	Magnitudes, 8, 8.3. Position, 240° ±.
			.254	.342		27.2				
						28.4*	. .	. .	. .	* Double weight.
	Mean	. .	.255	.345	. .	27.7				
	16 *Vulpeculæ*	. .	.238	.368	. .	359.9	. .	. .	. .	Magnitudes, 6, 6.5. Position, 90° ±. Weight, 3.
			.253	.369		358.5				
						356.8				
	Mean	. .	.246	.368	. .	358.4				
	1 *Delphini*	. .	.205	.385	. .	99.0	. .	. .	. .	Magnitudes, 6, 9. Position, 270° ±.
			.215	.387		98.5				
						99.0				
	Mean	. .	.210	.386	. .	98.8				
	O Σ 407	. .	.241	.348	. .	58.4*	. .	. .	. .	Magnitudes, 7.5, 8. Another star of same magnitude less than 1′ distant. * Half-weight.
			.232	.352		58.2				
						58.8				
	Mean	. .	.236	.350	. .	58.5				
	Satellite of NEPTUNE.	10 56	62.918	65.695*	11 9	220.8†	. .	. .	. .	* Weight, 3. † Weight, 4.
			.882	.709*		220.1†				
			.916	.665*		219.8†				
		11 7	.905	.662*		220.4†				
					11 16	220.1†				
	Mean	11 2	62.905	65.683	11 12	220.2				
		11 19	.886	65.683*	. .	. .	. .	. .	. .	* Weight, 4.
			.885	.694*						
			.902	.688*						
		11 31	.903	.699*						
	Mean	11 25	62.894	65.691						
24	20 *Draconis*	. .	. .	. .	. .	222.8	. .	. .	. .	Too close to measure distance with magnifying power 620. Star only elongated, but the s. f. seemed the smaller.
						228.8				
						223.8				
	Mean	. .	. .	. .	. .	225.1				

Date.	Object observed.	Washington Mean Time.	Microm. I (smallest reading).	Microm. II (largest reading).	Washington Mean Time.	Position Circle. Index.	Ver. I.	Ver. II.	Eye-piece.	Remarks.
1874.		h. m.	r.	r.	h. m.	°	°	°		
Sept. 24	Σ 2203	. .	.209	.385	. .	304.0	. .	. .	. .	Magnitudes, 7, 7. Position, 0°±. Weight, 3.
			.209	.387		303.0				
						302.9				
	Mean	. .	.209	.386	. .	303.3				
	Dione	9 30	59.234	69.340	8 55	344.5				
		9 35	.264	.320		344.5				
						344.2				
	Mean	9 52	59.249	69.330	. .	344.4				
	Tethys	9 40	60.351	68.280	9 3	2.4				
		9 46	.357	.265		2.5				
					9 5	2.6				
	Mean	9 43	60.354	68.272	9 4	2.5				
	Rhea	9 49	59.347	69.309	9 7	197.9				
		9 56	.380	.365		197.7				
					9 12	197.3				
	Mean	9 52	59.364	69.337	9 10	197.6				
	Enceladus	10 2	61.314	67.282	9 14	189.5				
		10 7	.348	.304		188.6				
					9 18	188.2				
	Mean	10 4	61.330	67.293	9 16	188.8				
	Titan	10 9	49.237	79.358	9 22	185.7				
			.261	.360	9 26	185.9				
		10 17	.269	.350	9 28	185.7				
	Mean	10 13	49.256	79.356	9 25	185.8				
	Satellite of Neptune.	10 40:*	62.727	65.851	11 17	239.4	. .	. .	. .	Weight, 3. * ± 3m.
			.764	.860		239.6				
			.730	.820		239.5				
		23 20*)	.752	.862	11 24	240.5	. .	. .	. .	* Sidereal time. † Chronometer.
		11 4†)								
	Mean	10 52	62.743	65.848	11 20	239.8				
		11 27	.782	.808						
			.750	.865						
			.775	.825						
		36	.778	.856						
	Mean	11 32	.771	.838						
25	Rhea	8 46	56.882	71.670	7 49	166.1				
		8 50	.902	.675		166.6				
					7 53	166.3				
	Mean	8 48	56.892	71.672	7 51	166.3				
	Enceladus	8 51	61.276	67.297	7 54	163.9				
		8 57	.372	.270		163.2				
					7 57	163.6				
	Mean	8 54	61.324	67.284	7 56	163.6				
	Tethys	8 58	60.288	68.316	7 58	181.6				
		9 2	.285	.305		181.8				
	Mean	9 0	60.286	68.310	. .	181.7				
	Dione	9 3	59.136	69.448	8 2	182 0				
		9 6	.134	.478		181.4				
	Mean	9 4	59.135	69.463	. .	181.7				
	Titan	8 34	56.455	82.152	8 5	177.6				
			.504	.184*	8 30	177.2	. .	. .	. .	* Double weight.
		8 44	.523	.090	8 31	177.4				
	Mean	8 39	56.494	82.152	8 22	177.4				

Date.	Object observed.	Washington Mean Time.	Microm. I (smallest reading).	Microm. II (largest reading).	Washington Mean Time.	Position Circle. Index.	Ver. I.	Ver. II.	Eye-piece.	Remarks.
1874.		h. m.	r.	r.	h. m.	°	°	°		
Sept. 26	ENCELADUS	8 42	62.486	66.085	8 3	32.2				
		8 47	.459	.160		34.3				
					8 6	34.5				
	Mean	8 44	62.472	66.122	8 4	33.7				
	JAPETUS	8 49	56.332	72.202	8 8	34.9				
			.425	.184		35.0				
		8 58	.462	.217	8 11	35.0				
	Mean	8 64	56.406	72.201	8 10	35.0				
	RHEA	9 15	61.328	67.225	8 14	54.1				
		9 18	.342	.257		54.1				
					8 17	54.9				
	Mean	9 18	61.335	67.241	8 16	54.4				
	DIONE	9 19	61.790	66.778*	8 19	42.5	. .	. .	. .	* Must be multiplied by the secant of 12°.
		9 23	.816	.805*		43.3				
					8 21	43.1				
	Mean	9 21	61.803	66.792	8 20	43.0				
	TITAN	9 28	45.779	82.761	8 27	170.5				
			.839	.765		170.3				
		9 37	.764	.817	8 31	170.5				
	Mean	9 32	45.794	82.781	8 29	170.4				
	TETHYS	9 39	59.928	69.699	8 34	176.5				
		9 43	.932	.749		177.3				
						176.5				
	Mean	9 41	59.930	69.724	. .	176.8				
	MIMAS	9 57	61.533	66.939	10 8	176.0	. .	. .	. .	MIMAS very hard to see owing to the low altitude of the planet. MIMAS passed Ansa about 11h.1. Parallel, 179°.08.
			.602	.948		176.9				
		10 5	.511	.956	10 13	175.8				
					10 16	176.2				
	Mean	10 1	61.549	66.948	10 12	176.2				
Oct. 1	JAPETUS	8 40	67.462*	. .	7 46	5.1	. .	. .	. .	Coincidence of micrometer wire and wire B, 93r.905. *Satellite on micrometer wire; Planet on wire B.
		8 44	.480*		7 50	5.1				
	Mean	8 42	67.471	. .	7 48	5.1				
	TITAN	8 51	55.160	73.380	7 58	28.5				
		8 57	.188	.419	8 0	28.5				
					8 1	28.4				
		8 54	55.174	73.400	7 59	28.5				
	RHEA	8 59	58.115	70.519	8 5	7.9				
		9 5	.123	.569	8 7	8.5				
					8 9	8.5				
	Mean	9 3	58.119	70.544	8 7	8.3				
	DIONE	9 7	60.220	68.380	8 11	156.2				
		9 12	.213	.436	8 13	156.9				
					8 15	156.5				
	Mean	9 10	60.217	68.408	8 13	156.5				
	TETHYS	9 15	60.940	67.626	8 17	159.5				
		9 20	.960	.595	8 19	159.1				
					8 21	159.3				
	Mean	9 18	60.950	67.610	8 19	159.3				
	ENCELADUS	9 23	60.820	67.825	8 23	176.8				
					8 26	176.2				
					8 27	176.0				
	Mean	. .	. .	. .	8 25	176.3				

Date.	Object observed.	Washington Mean Time.	Microm. I (smallest reading).	Microm. II (largest reading).	Washington Mean Time.	Position Circle. Index.	Ver. I.	Ver. II.	Eye-piece.	Remarks.
1874.		h. m.	r.	r.	h. m.	°	°	°		
Oct. 2	JAPETUS	8 5	63.779 — A — B / 2	. .	7 55	183.9				Coincidence's micrometer wire with A, 64r.295.
			63.422			183.9				Coincidence, micrometer wire with B, 93r.905.
			.645							
			.527							
	Mean	. .	63.593	. .	. .	183.9				
	TITAN	8 15	50 678	77.810	8 0	9.7				
			.742	.835		9.5				
		8 25	.739	.885						
	Mean	8 20	50.720	77.843	. .	9.6				
	HYPERION	. .	40.529*	. .	. .	355.6	. .	. .	. .	Images very unsteady and diffused.
		8 36	.516*		8 32	355.2				*Fixed wire A on planet; micrometer wire on satellite.
			.476*			355.4				
	Mean	. .	40.507	. .	. .	355.4				
3	TITAN	7 40	81.022*	77.173†	7 1	359.6	. .	. .	. .	*From wire A. †From wire B.
			.000*	.176†		359.6				
		7 51	[80].990*	.172†	7 6	359.5				
	Mean	7 46	81.004	77.174	7 4	359.6				
	RHEA	8 8	60.070	68.462	7 8	27.9				
		8 13	.112	.518	7 10	27.1				
	Mean	8 10	60.091	68.490	7 9	27.5				
	DIONE	8 15	60.850	67.719	7 12	23.0				
		8 19	.875	.751	7 13	23.1				
	Mean	8 17	60.862	67.735	7 12	23.1				
	TETHYS.	8 21	61.672	66.898	7 15	333.0				
		8 25	.712	.894	7 19	332.4				
	Mean	8 23	61.692	66.896	7 17	332.7				
	ENCELADUS . . .	8 27	61.156	67.408	7 22	6.3				
		8 33	.105	.420	7 24	6.8				
	Mean	8 30	61.130	67.414	7 23	6.6				
	HYPERION	8 3	70.581*	. .	7 27	171.2	. .	. .	. .	*From wire B. Weight, 2.
			.636*		7 30	171.0				
			.482*							
	Mean	. .	70.566	. .	7 28	171.1				
	JAPETUS	7 53	60.724*	. .	7 35	182.6	. .	. .	. .	Good seeing till about 7h 43m. While measuring TITAN, the atmosphere became suddenly very bad, improving a little toward the close. *From wire B.
			.811			182.6				
			.778							
			.740							
		8 0	.798							
	Mean	7 56	60.770	. .	7 35	182.6				
9	TETHYS ??	. .		. .	6 49	217.9*	. .	. .	. .	Through clouds. Position estimated, 210° ±. Observer, HOLDEN. *Wt., 1. Parallel, 179.1 ±.
						214.0*				
					6 53	218.0*				
					6 58	216.0*				
					7 1	215.7*				
					7 4	215.8*				
	Mean	. .	. .	. .	6 55	216.2				

Date.	Object observed.	Sidereal Time.	Sat. Center.	Titan—Sat.	Sat.—Rhea.	Jap.—Sat.	Jap.—Rhea.	Remarks.
1874.		h. m. s.	s.	s.	s.	s.	s.	
Oct. 12	SATURN I. . .	22 17 45.3						Setting for transits, 268°.8, by index.
		56.5						
		18 6.1						
		55.97	56.60					
	SATURN II . .	22 17 46.7						
		57.7						
		18 7.3						
		57.23						
	JAPETUS . . .	22 18 21.4						
		32.5						
		42.1						
		32.00				35.40		
	SATURN I. . .	22 19 13.9						
		24.9						
		34.8						
		24.53	25.10					
	SATURN II . .	22 19 15.0						
		26.2						
		35.8						
		25.66						
	JAPETUS . . .	22 19 49.9						
		20 1.0						
		10.6						
		0.50				35.40		
	SATURN I. . .	22 20 37.6						
		48.7						
		58.3						
		48.20	48.85					
	SATURN II . .	22 20 38.9						
		50.0						
		59.6						
		49.50						
	JAPETUS . . .	22 21 13.8						
		24.8						
		34.5						
		24.37				35.52		
	SATURN I. . .	22 22 23.3						
		34.4						
		44.2						
		33.97	34.60					
	SATURN II . .	22 22 24.6						
		35.7						
		45.4						
		35.23						
	JAPETUS . . .	22 22 59.5						
		23 10.6						
		20.2						
		10.10				35.50		
	SATURN I. . .	22 25 54.5						
		26 5.6						
		15.3						
		5.13						

Date.	Object observed.	Sidereal Time.	Sat. Center.	Titan—Sat.	Sat.—Rhea.	Jap.—Sat.	Jap.—Rhea.	Remarks.
1874.		h. m. s.	s.	s.	s.	s.	s.	
Oct. 12	SATURN II . .	22 25 55.8	5.76					
		26 6.8						
		16.6						
		6.40						
	JAPETUS . . .	22 26 30.5						
		41.6						
		51.5						
		41.20				35.44		
	SATURN I. . .	22 27 39.4						
		50.5						
		28 0.2						
		50						
	SATURN II . .	22 27 40.7	50.65					
		51.7						
		28 1.4						
		51.27						
	JAPETUS . . .	22 28 15.5						
		26.7						
		36.3						
		26.17				35.52		
	SATURN I. . .	22 28 59.2						
		29 10.2						
		20.0						
		9.80						
	SATURN II . .	22 29 1.4	10.56					
		11.4						
		21.2						
		11.33						
	TITAN. . . .	22 29 12.4						
		23.4						
		33.1						
		22.97		12.41				
	JAPETUS . . .	22 29 35.4						
		46.3						
		56.0						
		45.90				35.46		
	SATURN I. . .	22 32 27.4						
		38.4						
		48.2						
		38.00						
	SATURN II . .	22 32 28.6	38.62					
		39.7						
		49.4						
		39.23						
	TITAN. . . .	22 32 40.5						
		51.5						
		33 1.1						
		51.03		12.41				
	JAPETUS . . .	22 33 3.6						
		14.5						
		24.3						
		14.13				35.51		

Date.	Object observed.	Sidereal Time.	Sat. Center.	Titan—Sat.	Sat.—Rhea.	Jap.—Sat.	Jap.—Rhea.	Remarks.
1874.		h. m. s.	s.	s.	s.	s.	s.	
Oct. 12	SATURN I. . .	22 34 38.0						
		48.9						
		58.6						
		48.50						
	SATURN II . .	22 34 39.1	49.14					
		50.2						
		35 0.0						
		49.77						
	TITAN. . . .	22 34 51.2						
		35 2.0						
		11.9						
		1.70		12.56				
	JAPETUS . . .	22 35 14.0						
		25.1						
		34.9						
		24.67				35.53		
	SATURN I. . .	22 36 11.2						
		22.2						
		32.0						
		21.80						
	SATURN II . .	22 36 12.4	22.40					
		23.4						
		33.2						
		23.00						
	TITAN. . . .	22 36 24.3						
		35.3						
		45.0						
		34.87		12.47				
	Mean		. . .	12.46				
	JAPETUS . . .	22 36 47.2						
		58.2						
		37 8.0						
		57.80				35.40		
	Mean		. . .	. . .	. . .	35.47		
12	Sat. of NEPTUNE.		. . .	. . .	. . .	. . .	. . .	See page 274.
	Sats. of SATURN .		. . .	. . .	. . .	. . .	. . .	See page 274.
13	SATURN I. . .	22 17 21.2						
		32.3						
		42.0						
		31.83						
	SATURN II . .	22 17 22.4	32.42					
		33.5						
		43.1						
		33.00						
	JAPETUS . . .	22 17 57.3						
		18 8.5						
		18.0						
		7.93						
	SATURN I. . .	38.0				35.51		
		49.2						
		58.9						
		48.70						
	SATURN II . .	39.2	49.28					
		50.4						
		0.0						
		49.87						

JAPETUS *follows* SATURN 35ˢ.47 at 22ʰ 22ᵐ sidereal time, from ten transits over three wires.

TITAN *follows* SATURN 12ˢ.46 at 22ʰ 32ᵐ sidereal time, from four transits over three wires.

Date.	Object observed.	Sidereal Time.	Sat. Center.	Titan – Sat.	Sat. – Rhea.	Jap. – Sat.	Jap. – Rhea.	Remarks.
1874.		h. m. s.	s.	s.	s.	s.	s.	
Oct. 13	JAPETUS . . .	14.3						
		25.3						
		35.0						
		24.87				35.59		
	SATURN I. . .	45.0						
		56.0						
		5.8						
		55.60	56.20					
	SATURN II . .	46.2						
		57.2						
		7.0						
		56.80						
	JAPETUS . . .	21.3						
		32.3						
		42.0						
		31.87				35.67		
	RHEA	22.4						
		33.6						
		43.4						
		33.13						
	JAPETUS . . .	3.2						
		14.0						
		23.9					40.57	
		13.70						
	SATURN I. . .	24 56.0						
		[25] 7.0						
		16.8						
		6.60	7.23					
	SATURN II . .	[24] 57.2						
		[25] 8.4						
		18.0						
		7.87						
	RHEA	[24] 51.8						
		[25] 2.8						
		12.5						
		2.37			4.86			JAPETUS *follows* SATURN 35s.60 at 22h 22m sidereal time from four transits over 3 wires.
	JAPETUS . . .	[25] 32.4						
		43.2						
		53.0				35.64	40.50	JAPETUS *follows* RHEA 40s 54 at 22h 23m sidereal time, from two transits over 3 wires.
		42.87				35.60	40.54	
	SATURN I. . .	18.3						
		29.5						
		39.2						
		29.00	29.62					
	SATURN II . .	19.6						
		30.7						
		40.4						
		30.23						
	RHEA	14.0						
		25.0						
		34.8						
		24.64			4.98			RHEA *precedes* SATURN 4s.92 at 22h 25m sidereal time, from two transits over 3 wires.
					4.92			

Date.	Object observed.	Washington Mean Time.	Microm. I (smallest reading).	Microm. II (largest reading).	Washington Mean Time.	Position Circle. Index.	Ver. I.	Ver. II.	Eye-piece.	Remarks.
1874.		h. m.	r.	r.	h. m.	°	°	°		
Oct. 12	Satellite of NEPTUNE.	10 23	63.045	65.544	10 38:	69.1	. .	. .	. .	Parallel determined October 13, 179°.0.
			.058	.536		70.2				
			.100	.539		70.6				
		10 35	.084	.532	10 44	69.9				
						69.5				
	Mean	10 29	63.072	65.538	10 41	69.9				
		10 49	63.070	65.525						
			.110	.518						
			.075	.525						
		10 55	. .	.536						
	Mean	10 52	63.085	65.526						
13	TETHYS	8 13*	60.168	68.354	7 34*	358.5	. .	. .	. .	*Chronometer-correction, — 1m.
		8 17	.183	.395		358.4				
					7 43	358.6				
	Mean	8 14	60.176	68.374	7 38	358.5				
	DIONE	8 18	58.828	69.765	7 35	353.2				
		8 22	.807	.720		353.0				
					7 45	352.7				
	Mean	8 19	58.818	69.742	7 39	353.0				
	RHEA	8 24	56.867	71.684	7 37	348.0				
		8 27	.883	.711	7 48	348.2				
						348.3				
	Mean	8 24	56.875	71.698	7 42	348.2				
	TITAN	8 30	47.957	80.484	7 50	342.8				
		8 35	.947	.436		342.7				
					7 53	342.8				
	Mean	8 32	47.952	80.460	7 50	342.8				
	JAPETUS	. .	. .	. .	8 0	265.8*	174.95*	354.97*	. .	Parallel by short wires by index, 179°.0; parallel by longitudinal wire by index, 268°.8; by vernier I, 177°.88; by vernier II, 357°.90. *In taking these measures, the planet was in the center of motion, and the bisections made with the longitudinal wire. †The center of motion one-third of the distance from JAPETUS to planet and nearer JAPETUS.
					8 6	265.8†	175.00†	355.03†		
					8 3		175.00			
14	RHEA	7 53	61.872	66.706	7 25	258.5				
		7 56	.859	.720	7 27	257.6				
					7 28	257.1				
	Mean	7 54	61.865	66.713	7 27	257.7				
	DIONE	7 58	60.636	67.970	7 30	195.2				
		8 3	.621	.924	7 31.5	194.7				
	Mean	8 00	60.629	67.947	7 31	195.0				
	TETHYS	8 4	60.079	68.507	7 33.5	174.9				
		8 8	.092	.510	7 35	175.5				
	Mean	8 6	60.085	68.508	7 34	175.2				
	ENCELADUS . . .	8 20	61.155	67.458	7 36	180.2				
		8 24	.040	.508	7 37.5	179.4				
	Mean	8 22	61.098	67.483	7 37	179.8				
	MIMAS	. .	. .	. .	. .	. .	. .	. .	. .	Seen, but not well enough to measure.
	TITAN	8 10	51.750	76.844	7 41	152.1				
			.760	.870	7 44	152.0				
		8 17	.716	.875	7 47	152.4				
	Mean	8 14	51.742	76.863	7 46	152.2				

Date.	Object observed.	Washington Mean Time.	Microm. I (smallest reading).	Microm. II (largest reading).	Washington Mean Time.	Position Circle. Index.	Ver. I.	Ver. II.	Eye-piece.	Remarks.
1874.		h. m.	r.	r.	h. m.	°	°	°		
Oct. 14	JAPETUS	8 27	43.532*	. .	8 41	265.5	174.56	354.60	. .	In taking the measures of angle of position, JAPETUS was at about 48 revolutions and SATURN 5 revotions beyond wire B. The mean for angles of position does not include the readings of the index. *Distance from wire B.
		8 29	.576			265.5	174.56	354.58		
			.608							
			.564							
		8 35	43.592							
	Mean	8 30	43.574	. .	. .	. .	174.58	. .	. .	Focus shortened slightly.
	Satellite of NEPTUNE.	9 51	62.527	65.940	10 8	48.5	. .	. .	. .	Parallel for NEPTUNE observations by index, 179°.45.
			.578	.964		48.4				
			.625	.952		48.3				
		10 5	.595	.970		48.5				
					10 15	49.8				
	Mean	9 58	62.581	65.956	10 12	48.7				
		10 17	.606	.997						
			.587	.965						
			.603	.968						
		10 25	.640	.964						
	Mean	10 21	62.609	65.974						
15	MIMAS	7 16	61.565	66.992	7 6	354.9	. .	. .	. .	Exceedingly faint and difficult. MIMAS passed Ansa at 7h.6.
					7 10	354.4				
	Mean	. .	. .	. .	7 8	354.6				
	ENCELADUS . . .	7 45	62.203	66.439	7 24	329.9				
		7 51	.222	.335	7 28	329.0				
	Mean	7 48	62.213	66.387	7 26	329.45				
	TETHYS	7 52	60.018	68.540	7 29	352.3				
		7 56	.062	.568	7 31	352.2				
	Mean	7 54	60.040	68.554	7 30	352.25				
	DIONE	7 58	62.365	66.170	7 33	293.3	. .	. .	. .	Weight, 4. Images good.
		8 2	.385	.144	7 35	293.3				
	Mean	8 0	62.375	66.157	7 34	293.3				
	RHEA	8 13	56.690	71.867	7 37	355.0				
		8 17	.738	.872	7 38	355.0				
	Mean	8 15	56.714	71.870	7 38	355.0				
	TITAN	8 4	56.265	72.262	7 39	310.6				
			.302	.276	7 41	310.5				
		8 11	.305	.245	7 43	310.5				
	Mean	8 8	56.291	72.261	7 41	310.5				
	JAPETUS	. .	. .	. .	8 20	. .	174.32	354.36	. .	Angles of position measured by long wire. JAPETUS at 50 revolutions, SATURN 5 revolutions, beyond wire B.
					8 42		174.39	354.41		
	Mean	. .	. .	. .	8 31	. .	174.37			
		8 47	43.728*	. .	. .	. .	. .	. .	. .	Weight, 4. Parallel by vernier I, 178°.22; by vernier II, 358°.26 by longitudinal wire. *Distances from wire B.
			.750*							
			.778*							
			.767*							
		8 56	.825*							
		8 57	.730*							
	Mean	8 53	43.763							
	Satellite of NEPTUNE.	9 22	63.054	65.496*	9 39	67.6†	. .	. .	. .	Setting for distances, 159°. *Weight, 5. †Weight, 4.
			.075	.488*		68.5†				
			.063	.506*		68.5†				
		9 38	.065	.496*		69.6†				
					9 47	70.1†				
	Mean	9 30	63.064	65.496	9 43	68.9				

Date.	Object observed.	Washington Mean Time.	Microm. I (smallest reading).	Microm. II (largest reading).	Washington Mean Time.	Position Circle. Index.	Ver. I.	Ver. II.	Eye-piece.	Remarks.
1874.		h. m.	r.	r.	h. m.	°	°	°		
Oct. 15	Satellite of NEPTUNE.	. .	63.069	.495	. .	. .	. .	. .	6 A	Weight, 5. Images good and observations very fine in every way.
			.098	.465						
			.090	.460						
		10 1	.104	.486						
	Mean	9 56	63.090	65.476						
16	Satellite of NEPTUNE.	9 58.5	. .	65.028	10 54	199.7	. .	. .	. .	*Good. †Weight, 2.
		10 25	63.515		10 56	198.0				
		10 45		.058	10 59	198.8				
		10 48	.525*		11 0	201.0†				
		10 49		.031	11 3	201.4				
		10 51	.512							
	Mean	10 36	63.517	65.039	10 58	199.8				
17	DIONE	7 39	. .	69.578	7 5	360.0*	. .	. .	. .	*Weight, 1.
				.566		358.3*				
		7 45		.599	7 10	360.0*				
		7 49	59.078		7 12	359.5*	. .	. .	. .	Through clouds.
		7 54	.057							
		7 55	.078							
	Mean	7 48	59.071	69.581	7 14	359.5				
	TETHYS . . .	8 10	60.439	68.202	7 14	346.2*	. .	. .	. .	*Weight, 1.
		8 19	.455	.158		345.7*				
		8 21	.434	.130	7 20	345.0*				
					7 21	345.8*				
	Mean	8 17	60.443	68.163	7 18	345.7				
	RHEA	8 30*	. .	. .	7 23	2.0†	. .	. .	. .	*Planet in haze and cloud. †Weight, 1.
						3.0†				
						2.1†				
					7 27	2.4†				
	Mean	. .	. .	. .	7 25	2.4				
	TITAN	. .	. .	. .	7 30	27.8*	. .	. .	. .	*Weight, 2.
						28.4*				
					7 33	27.8*				
	Mean	. .	. .	. .	7 32	28.0				
	ENCELADUS? . . .	. .	. .	.	7 59	336.5*	. .	. .	. .	*Both measures poor; satellite scarcely to be seen.
					8 25	331.2*				
	Mean	. .	. .	. .	8 12	333.8				
	Satellite of NEPTUNE.	9 25	62.649	65.983*	9 55	229.5†	. .	. .	3	Satellite very poorly seen. *Weight, 1. †Weight, 3.
			.601	.972*		229.1†				
			.572	66.038*		229.3†				
		9 51	.525	.061*	10 1	228.8†				
	Mean	9 38	62.587	66.013	9 58	229.2				
		10 9	.562	66.002*	. .	. .	. .	. .	4	Satellite not well seen with either power. Observer, HOLDEN. *Weight, 2.
			.645	66.050*						
		10 19	.512	65.999*						
	Mean	10 14	62.573	66.017						
19	JAPETUS	8 8	*48.424†	. .	8 30	263.2	172.35	352.38	. .	*From wire B. †Half-weight.
			.320†				172.42	352.43		
			.398							
			.354							
			.362							
		8 22	.333	. .	. .	. .	. .	. . .	. .	SATURN at 89 revolutions; JAPETUS at 48 revolutions.
	Mean	8 15	48.365				172.40			
	TITAN	8 41	47.841	80.674	8 35	. .	268.55	. .	. .	Angles measured with longitudinal wire. Parallel for longitudinal wire, index, 269°.15; vernier I, 178°.25; vernier II, 358°.27.
			.849	.649			268.67			
		8 48	.860	.708			268.65			
	Mean	8 44	47.850	80.677	. .		268.62			

Date.	Object observed.	Washington Mean Time.	Microm. I (smallest reading).	Microm. II (largest reading).	Washington Mean Time.	Position Circle. Index.	Ver. I.	Ver. II.	Eye-piece.	Remarks.
1874.		h. m.	r.	r.	h. m.	°	°	°		
Oct. 19	Satellite of NEPTUNE.	9 50	63.482	65.098*	10 5	20.4*	. .	. .	6 A.	Air clear, but images very unsteady, so that the satellite was quite hard to see. Parallel, 359°.50. *Weight, 2.
			.520	.090*		23.8*				
		10 0	.490	.058*		20.4*				
						20.5*				
					10 15	23.8*				
	Mean	9 55	63.497	65.082	10 10	21.8				
20	TETHYS	6 59	61.288*	67.347	6 36	336.7	. .	. .	. .	*Index at 257° instead of 247°; all the others correct. Mean correct..
		7 3	.312	.330		334.1				
		7 13	.311	.353	6 39	334.9				
					6 42	334.9				
	Mean	7 6	61.305	67.343	6 39	335.2				
	DIONE	7 19	58.928	69.546	6 43	318.0				
		7 30	59.061	.600		348.4				
		7 34	59.060	.549	6 48	348.8				
			59.055							
	Mean	7 28	59.026	69.565	6 45	348.4				
	RHEA	7 39	57.603	70.083	6 50	343.1	. .	. .	. .	Observer, HOLDEN, until 8h; after that, Observer NEWCOMB.
			.492	.009		342.3				
		7 49	.600	.005	6 55	342.8				
	Mean	7 44	57.565	70.032	6 52	342.7				
	JAPETUS	8 0	50.286*	. .	8 6	. .	171.93	351.96	. .	Setting for distances, 263°.0. Angles measured with longitudinal wire. Saturn 2 revolutions beyond wire B. *From wire B.
			.340				171.84	351.87		
			.302							
			.322							
		8 4	.238							
	Mean	8 2	50.298	. .	. .	. .	171.90			
	TITAN	8 18	47.203	76*.391	8 35	. .	170.20	350.23	. .	Center of motion three-fourths of the distance from Saturn to Titan. *Whole revolution should be 81.
			.125	.464				350.38		
			.168	.429				350.34		
			.146	.419	8 39					
		8 33	.125	.438						
	Mean	8 26	47.153	81.428	8 37	. .	170.29			
	Satellite of NEPTUNE.	9 8	62.616	65.940*	9 23	231.0†	. .	. .	. .	*Weight, 4. †Weight, 5.
			.579	[66].021*		230.0†				
			.578	[65].998*		230.4†				
			.590	.990*	9 27	230.1†				
		9 21	.592	.989*	9 28	230.9†				
	Mean	9 14	62.591	65.988	9 26	230.48				
		9 31	.558	.014*	. .	. .	. .	. .	6 A.	*Weight, 3.
			.592	.991*						
			.586	.995*						
			.599	.996*						
		9 46	.614	.978*						
	Mean	9 38	62.590	65.995						
22	DIONE	. .	. .	. .	6 33	251.4*	. .	. .	. .	*Weight, 1.
						249.8*				
						250.1*				
					6 41	248.7*				
					6 43	249.1*				
	Mean	. .	. .	. .	6 39	249.8				
	TETHYS	. .	. .	. .	6 46	315.1*	. .	. .	. .	*Weight, 2.
						315.6*				
					6 52	315.2*				
	Mean	. .	. .	. .	6 49	315.3				

Date.	Object observed.	Washington Mean Time.	Microm. I (smallest reading).	Microm. II (largest reading).	Washington Mean Time.	Position Circle. Index.	Ver. I.	Ver. II.	Eye-piece.	Remarks.
1874.		h. m.	r.	r.	h. m.	°	°	°		
Oct. 22	RHEA	7 5	. .	66.791	6 55	350.8*	. .	. .	. .	The last of these measures taken through dense haze, which now hides the fainter satellites completely. Observer, HOLDEN. *Weight, 4.
						350.8*				
					7 00	350.9*				
	Mean	. .	. .	. .	6 58	350.8				
	ζ Aquilæ	. .	63.725	64.798	. .	209.2	. .	. .	. .	Observer, NEWCOMB.
			.705	.859		211.9				
	Mean	. .	63.715	64.828	. .	210.6				
	τ Cygni (close companion).	. .	.154	.405	. .	101.2*	. .	. .	. .	Distance hardly better than an estimate. Observation very difficult. *Weight, 1. †Weight, 2. ‡Weight, 4.
						101.0*				
						108.5*				
						105.2†				
						107.2‡				
	Mean	. .	. .	. .	. .	105.5				
	τ^3 *Cygni*.	. .	62.780	65.815	. .	8.4				
						6.4				
	Mean	. .	. .	. .	. .	7.4				
	Satellite of NEPTUNE.	9 43	63.360	65.145*	9 52	204.8†	. .	. .	4	*Weight, 2. †Weight, 3.
			.426	.160*		203.8†				
		9 50	.431	.130*		203.8†				
						204.2†				
					9 58	206.4†				
	Mean	9 46	62.406	65.145	9 55	204.6				
		10 0	63.394	65.114	. .	. .	. .	. .	. .	
		10 6	.395	.182						
	Mean	10 3	63.394	65.148						
23	RHEA	7 7	61.939	65*.660	6 36	275.0†	. .	. .	. .	*66 revolutions. †Weight, 3.
		7 12	.937	.623		274.6†				
		7 15	.985	.634	6 39	275.6†				
	Mean	7 11	61.954	66.639	6 38	275.1				
	TETHYS	6 53	62.762	65.784*	6 41	298.7†	. .	. .	. .	Satellite very steady, but quite faint. *Weight, 2. †Weight, 1.
			.852	.669*		300.5†				
		7 0	.842	.681*	6 46	‡300.0	. .	. .	. .	‡Good.
					6 47	297.1†				
					6 50	296.4†				
	Mean	6 56	62.819	65.711	6 46	298.54				
	DIONE	7 41	60.654	67.870	7 19	331.9*	. .	. .	. .	*Weight, 4.
		7 45	.690	.921		331.1*				
					7 22	331.9*				
	Mean	7 43	60.672	67.896	7 20	331.6				
	TITAN	7 48	57.358	71.235	7 25	305.8				
			.378	.237		305.5				
		7 53	.332	.213	7 30	305.9				
	Mean	7 50	57.356	71.228	7 28	305.7				
	JAPETUS	8 13	*57.505†	. .	8 0	. .	169.80	349.81	. .	JAPETUS has, I think, been constantly growing fainter since observed on September 26. It was then about as bright as RHEA, and is now hard to observe, but the dense haze and moonlight render it impossible to estimate its magnitude accurately. *From wire B. †Weight, 2.
			.490†				169.90	349.90		
			.605†							
			.430†							
		8 19	.536†							
	Mean	8 16	57.513	. .	. .	. .	169.85			
	ε Equulei	. .	.176	.400	. .	243.1	. .	. .	. .	Magnitudes, 6.5, 6.7. p. = 270° ±. Observer before $7^h\ 40^m$, HOLDEN; after, NEWCOMB.
			.174	.420		242.5				
						242.2				
	Mean	. .	.175	.410	. .	242.6				

Date.	Object observed.	Washington Mean Time.	Microm. I (smallest reading).	Microm. II (largest reading).	Washington Mean Time.	Position Circle. Index.	Ver. I.	Ver. II.	Eye-piece.	Remarks.
1874.		h. m.	r.	r.	h. m.	°	°	°		
Oct. 26	ENCELADUS* . . .	7 27	62.488	66.099	6 51	328.1	. .	. .	. .	*Chronometer correction, — 1m 24s (for Saturn observations only).
			.464	.010		327.4				
		7 32	.500	.050	6 54	326.9				
	Mean	7 28	62.484	66.053	6 51	327.5				
	RHEA	7 18	57.895	70.693	6 55	4.5				
			.872	.685		4.9				
		7 25	.875	.696	6 58	5.0				
	Mean	7 20	57.881	70.691	6 55	4.8				
	TITAN	7 9	50.049	78.490	6 59	6.5	275.16	95.12		
			.100	.550						
		7 16	.072	.507						
	Mean	7 11	50.074	78.516						
					7 5	275.6	184.92	. . .	. .	This set of angles taken with longitudinal wire.
								4.94		
								4.90		
								4.68		
	Mean	. .	. .	. .	7 2	. .	184.86			
	JAPETUS	7 38	66.368*	. .	. .	. .	. .	. .	. .	*From wire B.
			.380							
			.314							
		7 43	.380							
			.388							
	Mean	7 39	66.366							
	Satellite of NEPTUNE.	9 43	62.556	65.997	9 57	. .	232.1			
			.594	[66].041			232.9			
			.596	.010				52.5*		
		9 55	.586	.023	10 3			54.1*		
					10 4			52.5*		
	Mean	9 49	62.583	66.018	10 00	. .	. .	52.8		
		10 6	.554	.028	. .	. .	. .	. .	6 A	
		10 12.	.612	.033						
				.025*	. .	. .	. .	. .	. .	*Half-weight.
	Mean	10 9	66.583	66.029						
27	JAPETUS	7 26	69.756*	. .	7 16	. .	255.33	75.31	. .	*From wire B. Coincidence = 93'.896.
			.725				255.29			
			.709				255.20			
		7 29	.692				255.22			
		7 30	.759							
	Mean	7 28	69.728	. .	. .	. .	255.27			
	TITAN	7 39	76.844*	. .	7 33	. .	175.90	355.92	. .	Angles of TITAN measured by longitudinal wire. Parallel by longitudinal wire, by index, 269°.1; by vernier I, 178°.19; by vernier II, 358°.23. Parallel by short wires, by index, 359°.4; by vernier I, 268°.57; by vernier II, 188°.53. *From wire B. †From wire A. Coincidence, 64.292.
			.839					356.05		
			.841		7 36			356.07		
	Mean	. .	76.841	. .	7 35	. .	. .	356.01		
		7 42	81.294†							
			.308							
		7 44	.291							
	Mean	7 43	81.298							
	Satellite of NEPTUNE.	9 14	63.382	65.175	9 26	78.5	. .	. .	5 A	Observations extremely difficult, owing to haze and moonlight. Weight, 2.
			.340	.205		80.0				
		9 23	.380	.215		79.9				
						78.0				
					9 34	79.4				
	Mean	9 18	63.367	65.198	9 30	79.2				
		9 41	.382	.200*	. .	. .	. .	. .	9	*Half-weight.

Date.	Object observed.	Washington Mean Time.	Microm. I (smallest reading).	Microm. II (largest reading).	Washington Mean Time.	Position Circle. Index.	Ver. I.	Ver. II.	Eye-piece.	Remarks.
1874.		h. m.	r.	r.	h. m.	°	°	°		
Nov. 13	Satellite of NEPTUNE.	9 40*	62.718	65.922	10 12*	333.0	. .	. .	6 A.	Weight 3 for position angle and distance. Setting for distances by index, 60°. *Chronometer correction, + 0m.9.
			.715	.904		332.8				
			.755	.895	10 16.5	333.2	. .	. .		
		9 52	.700		10 17.7	332.9				
		10 10		.869	10 18.8	331.8				
	Mean	9 54	62.744	65.896	10 15	332.7				
		10 21	62.833	65.960	. .	. .	. .	. .	. .	Parallel, 91°.1.
		10 25		65.828						
	Mean	10 22	65.833	65.894						
16	τ *Cygni*	. .	.198	.381	. .	19.8				
			.190	.405		20.7	. .	. .	4	
						20.4				
	Mean	. .	.194	. .393	. .	20.3				
	Satellite of NEPTUNE.	8 33	62.730	65.875	8 45	333.2	. .	. .	6 A.	
			.750	.844		335.8				
			.773	.815		4.4				
		8 43	.714	.834		3.5				
					8 55	2.1				
	Mean	8 38	62.742	65.842	8 50	333.8				
		9 6	.748	65.835	. .	. .	. .	. .	. .	Parallel by index, 93°.65; by vernier I, 2°.73; by vernier II, 182°.75.
			.756	.818						
			.768	.840						
		9 16		.846	. .	. .	. .	. .	. .	Weight, 4.
		9 22	.738							
		9 25	.775	.851						
	Mean	9 17	62.757	65.838						
25	Satellite of NEPTUNE.	8 47*	62.880	65.700	9 7*	338.2	. .	. .	6 A.	*Chronometer correction, — 1m.25.
			.900	.675		9.5				
			.895	.688		8.9				
		9 0	.885	.678		7.7				
					9 16	8.5				
	Mean	8 52	62.890	65.685	9 10	338.56				
		9 19	62.909	65.645	. .	. .	. .	. .		Weight, 4. Parallel by index, 93°.13; by vernier I, 2°.31; by vernier II, 182°.32.
			.912	.635						
		9 26	.897	. .						
		9 40		.639						
		9 43	.915	.649						
	Mean	9 28	62.908	65.642						
26	Satellite of NEPTUNE.	9 8*	63.791	64.815	9 18*	86.2	. .	180.3	8 F.	*Watch correction, — 2m.
			.785	.759				176.7		
			.786	.758	9 31			174.7†	. .	†Half-weight.
					9 35			174.0		
								178.0		
		9 15			9 42			179.3		
	Mean	9 11	63.787	64.777	9 32	. .	. .	178.4		
		9 48*	.741	64.787	. .	. .	. .	. .	4	*Watch correction, —2m. The image of Neptune the finest I ever saw. Measures difficult, owing to the proximity of the planet.
		9 52	.744	.830						
	Mean	9 50	63.742	64.808						
27	B. A. C. 586 . . .	. .	.264	.306	. .	. .	124.4	. .	9	Definition superb; stars not completely separated. p. (est.), 330°. Magnitudes, 7½, 7½.
			.264	.314			127.8			
							128.3	. .		
							126.0			
	Mean	. .	.264	.310	. .	. .	126.6			

Date.	Object observed.	Washington Mean Time.	Microm. I (smallest reading).	Microm. II (largest reading).	Washington Mean Time.	Position Circle. Index.	Ver. I.	Ver. II.	Eye-piece.	Remarks.
1874.		h. m.	r.	r.	h. m.	°	°	°		
Nov. 27	Satellite of NEPTUNE.	9 13	62.710	65.889	9 28	331.8*	. .	. .	. .	Weight, 4. *Probably 231.8.
			.715	.859		221.3				
			.723	.885	10 0	231.9	. .	. .	800 A.	
		9 26	.747	.898		229.5				
					10 3	230.1				
	Mean	9 17	62.724	65.883	9 48	230.9				
		10 6	.685	.901						
		10 22	.690	.892						
			.668	.920						
		10 23	.697	.907						
	Mean	10 23	62.685	65.906						
		10 32	.660	.905	. .	. .	. .	. .	600 A.	Weight, 5. p. (est.), 240°. Watch correction, — 2m.
		10 35	.675	.878						
	Mean	10 32	62.668	65.892						
30	Satellite of NEPTUNE.	6 57	.680	.852	. .	. .	. .	. .	. .	Weight, 3. Satellite extremely steady, but very faint, owing to haze.
			.686	.885						
			.671	.879	. .	. .	. .	. .	600 A.	
		7 0	.666	.828						
	Mean	6 58	62.676	65.861						
Dec. 4	Satellite of NEPTUNE.	7 41	63.094	65.528	7 53	. .	264.5	. .	. .	p. (est.), 180°. Parallel by index, 107.°4; by vernier I, 16°.93; by vernier II, 196°.96. Chronometer correction, —4m.
			.077	.498			265.5			
			.069	.500			265.7			
		7 51	.030	.480			266.5	. .	600 A.	
					8 0		263.8			
	Mean	7 42	63.068	65.501	7 52	. .	265.2			
		8 5	63.092	65.520						
			.055	.516						
			.077	.488						
		8 14	.050	.489						
	Mean	8 6	63.068	65.503						
		9 15	. .	. .	. .	. .	. .	. .	. .	The Position Circle was found to have been unscrewed partially at 9h 15m. It was screwed tight. Parallel for long wire by index, 174°.8; by vernier I, 84°.36; by vernier II, 264°.37.
5	Satellite of NEPTUNE.	8 47.5	63.610	64.909	. .	. .	. .	. .	. .	Too hazy to go on.
			.620	.949						
			.614	.956	. .	. .	. .	. .	600 A.	
		8 59	.619							
	Mean	8 52	63.616	64.938						
8	Satellite of NEPTUNE.	8 34	63.576	65.020	8 44	. .	195.5	. .	. .	P. (est.), 250°. Chronometer correction, — 1m 30s.
			.546	.028			195.2			
			.578	[64].995			192.0	. .	800 A.	
		8 42	.572	.020			196.2			
					8 49		1 3.8			
	Mean	8 36	63.568	65.016	8 45	. .	194.5			
		8 53	.554	.025	. .	. .	. .	. .	. .	Weight, 3. Parallel by micrometer wire, by index, about 85°.5; by vernier I, 354°.75; by vernier II, 174°.78. The same by fixed wire A, 354°.68 and 174°.70.
			.540	.025						
			.541	.996						
		9 03	.549	.020						
	Mean	8 56	.546	.016						
9	Satellite of NEPTUNE.	7 56	62.594	65.900	8 25	. .	223.7	. .	. .	Chronometer correction, — 1m.
			.660*	.912	. .	. .	225.4	. .	. .	* Half-weight.
		8 3		.900			223.9	. .	600 A.	
		8 6	.679				227.0			
		8 9	.625	.899	8 32		225.1			
	Mean	8 2	62.637	65.903	8 28	. .	225.0			

Date.	Object observed.	Washington Mean Time.	Microm. I (smallest reading).	Microm. II (largest reading).	Washington Mean Time.	Position Circle. Index.	Position Circle. Ver. I.	Position Circle. Ver. II.	Eye-piece.	Remarks.
1874.		h. m.	r.	r.	h. m.	°	°	°		
Dec. 9	Satellite of NEPTUNE.	8 34	.608	.940	. .	. .	. .	. .	. .	Weight, 2. Images unsteady, diffused.
			.670	.926						
			.651	.859						
		8 45	.656	.926						
	Mean	8 38	62.646	65.913						
15	Satellite of NEPTUNE.	8 18.5	62.585	65.946	8 30	. .	227.3			
			.640	.909			227.8			
			.608	.907				48.2	800 A.	
		8 27	.601	.923				48.9		
					8 37		228.9			
	Mean	8 23	62.608	65.921	8 34	. .	. .	48.22		
		8 40	62.604	65.920						
			.600	.929						
			.586	.936						
		8 49	.625	.935						
	Mean	8 44	62.604	65.930						
21	Satellite of NEPTUNE.	7 53	62.599	66.023	7 37	. .	. .	232.1	. .	p. (est.), 210°. Parallel same as December 8. Weight for position, 2; for distance, 1; distances hard to measure on account of strong moonlight and increasing haze. Clock correction, $-3^m\ 25^s$. *Half-weight. HOLDEN.
		8 5	.599	65.839*				232.6		
			.512	66.000				232.2		
			.465*					231.6	600 A.	
		8 20		65.825	7 45			231.9		
	Mean	8 3	62.555	65.934	7 39	. .	. .	232.1		
24	Satellite of NEPTUNE.	7 21	62.529	66.033*	7 0	. .	56.9‡	. .	. .	p. (est.), 20°. Parallel by vernier I, 178°.55. Weight for position angle, 3. Satellite seen best with 400, but measures with 800 A. much the best. *Weight, 1. †Weight, 3. ‡Adjusted focus. HOLDEN.
			.599	65.915*				237.9	600 A.	
			.572	.885†				236.6	800 A.	
			.602	.886†				236.6		
		7 57	.632	.865†	7 9			237.3		
	Mean	7 39	62.592	65.903	7 4	. .	57.1			

OBSERVATIONS OF COMETS.

Date.	Object observed.	Washington Mean Time.	Micrometer reading.	Star.	Comet.	Remarks.
1874.		h. m. s.	r.	h. m. s.	h. m. s.	
June 17	Comet III, 1874 .	8				*Nucleus very* well defined, and elongated in the direction of the tail. NEWCOMB.
18	Comet III, 1874 .	. . .				The *tail* seems to be less dense in the middle region, the *nucleus* elongated toward a bright star K in drawing. (Drawing not given; K is the brightest star in the field of view, the diameter of which is 13′.) NEWCOMB.
July 3	Comet III, 1874 .	9 5				*Nucleus* about 2″.7 in diameter, quite sharply defined, and seeming angular on the side next the tail, but ill-defined on the other side; *nucleus* a little pointed next the tail. *Coma* seemed not symmetric with respect to the tail, but more developed on the *following* side. *tail* extremely ill-defined, darker near the axis; nebulosity surrounding the head is extended, very diffuse, and ill-defined.
		9 14				Comet passed about 3″ from a 12-magnitude *. NEWCOMB.
30	Comet V, 1874 Difference of Declination with *Oel. Arg. N. Z.* 15453–4.	9 28 8*	Star 66.754 Comet . . . 77.860 11.106			Star is Oeltzen's Arg. N. Z. 15453-4. Comet *follows* and is *north* of star. *Chronometer correction, -7^s.

Date.	Object observed.	Washington Mean Time.	Micrometer reading.	Star.	Comet.	Remarks.
1874.		h. m. s.	r.	h. m. s.	h. m. s.	
July 30	Comet V, 1874—Continued.		Star 66.957			Place of star.
		32 0	Comet 485			(1842.0) $\alpha = 15^h\ 27^m\ 22^s.74$ $\delta = +63°\ 15'\ 8''.8$
		32 30	Comet . . . 79.020			$\Delta\alpha$ $+ 33^s.36$ $\Delta\delta$ $- 6'\ 28''.1$
			11.795			$\alpha' = 15^h\ 27^m\ 56^s.10$ $\delta' = +63°\ 08'\ 40''.7$
			Star 67.217			
		9 36 50*	Comet . . . 79.772			*Chronometer correction, $- 7^s$.
			12.555			
	Difference of Right Ascension with *Oel. Arg. N. Z.* 15453-4.	. . .		18 15 1.6*	18 17 39.0*	* Sidereal clock correction, $+ 21^s.2$.
				24.4	18 1.0	
				44.8	18 22.1	
				18 15 23.6	18 18 0.7	Comet—star = $2^m\ 37^s.1$.
				18 19 30.9	18 22 7.6	
				53.3	30.2	
				20 14.1	50.4	
				18 19 52.8	18 22 29.4	Comet—star = $2^m\ 36^s.6$.
				18 23 21.0	18 25 56.4	
				43.4	26 19.0	
				24 4.4	26 39.5	
				18 23 42.9*	18 26 18.3*	Comet—star = $2^m\ 35^s.4$. Coincidence of micrometer wire and fixed wire. $64^r.342$.
		9 48 21.2				Comet *follows* star $2^m\ 36^s.37$.
		9 48 21.2				Comet *north* of star, $2'\ 27''.4$.
		9 48 21.2				Place of comet, $\alpha = 15^h\ 30^m\ 32^s.47$; $\delta = +63°\ 11'\ 8''.1$. NEWCOMB.
31	Comet V, 1874 . .	9 31 20*	Comet . . . 59.399			*Chronometer correction, $- 18^s$.
			Star 37.452			
			21.947			
		9 35 50	Comet . . . 60.378			
			Star 37.602			
			22.776			
		9 39 50	Comet on wire A 64.342			
			Star 40.767			
			23.575			
		9 44 0	Comet on wire A 64.342			
			Star 40.252			
			24.090			
		9 46 30	Comet on wire A 64.342			Clouds prevent further observations either in declination or right ascension, and star which *follows* comet, is not identified. NEWCOMB.
			Star 40.001			
			24.341			
Aug. 3	Comet V, 1874.		Micrometer readings. Star on wire B.			
	Difference of Declination with *Oel. Arg. N. Z.* 15235.	9 57 0*	Comet . . . 69.529			Comet *south* of star. *Chronometer correction, $+ 1^m\ 40^s$. Coincidence of micrometer wire with wire B—
		9 59 30	Comet . . . 69.885			
		10 1 45	Comet . . . 70.150			
		10 27 45	Comet . . . 73.640			$103^r.955$
		10 29 0	Comet . . . 74.978			$71^r.456$
	Mean	10 11 0*	 71.456			$10^h\ 12^m\ 40^s$ W. M. T. $32^r.499 = 5'\ 21''.8$.
	Difference of Right Ascension with *Oel. Arg. N. Z.* 15235.	. . .		18 59 43.0*	19 0 44.0*	*Times by sidereal clock; correction, $- 2^m\ 33^s.7$.
				60 7.4	1 7.7	
				60 31.3	1 31.9	
				19 0 7.23	19 1 7.87	Comet—star = $60^s.64$.
				19 2 42.9	19 3 44.0	
				3 7.8	4 7.7	
				3 31.8	4 31.8	
				19 3 7.50	19 4 7.83	Comet—star = $60^s.33$.

Date.	Object observed.	Washington Mean Time.	Micrometer readings.	Star.	Comet.	Remarks.
1874.		h. m. s.	r.	h. m. s.	h. m. s.	
Aug. 3	Comet V, 1874—Continued.			19 6 1.3	19 7 1.8	
				26.2	25.8	
				49.7	49.3	
				19 6 25.73	19 7 25.63	Comet−star = 59ˢ.90.
				19 8 47.0	19 9 46.6:	
				9 11.2	10 10.7	
				9 34.8	10 33.7	
				19 9 11.0	19 10 10.33	Comet−star = 59ˢ.33.
				19 11 21.6	19 12 20.5	
				11 45.2	12 44.6	
				12 8.8	13 6.6	
				19 11 45.20	19 12 43.90	Comet−star = 58ˢ.70.
		19 3 33.6*				Comet *follows* star 59ˢ.78. * Wash. sid. time.
		10 13 27.1				
		10 13 27.1				Comet *south* of star 5′ 20″.7.
		10 13 27.1				Comet *follows* star 59ˢ.78.
						Oel. Arg. N. Z. 15235.
						(1842.0) $\alpha = 15^h\ 8^m\ 50^s.38$ $\delta = +65°\ 53'\ 37''.9$
						$\Delta\alpha$ $+29^s.76$ $\Delta\delta$ $-\ 7'\ 7''.9$
						$\alpha' = 15^h\ 9^m\ 20^s.14$ $\delta' = +65°\ 46'\ 30''.0$
		10 13 27.1				Place of comet, $\alpha = 15^h\ 10^m\ 19^s.92$; $\delta' = +65°\ 41'\ 09''.3$. NEWCOMB.

OBSERVATIONS OF THE ECLIPSES OF JUPITER'S FIRST SATELLITE IN 1874.

Date.	Disappearance or Re-appearance.	Clock or Chronometer Time.	Clock or Chron. Correction.	Washington Mean Time of Re-appearance or Disappearance.	Amer. Eph. Time.	O.—C.	Aperture.	Mag. Power.	Observer.
1874.		h. m. s.	m. s.	h. m. s.	m. s.	s.	in.		
Jan. 11	Disappearance . .	13 39 50	+ 24.4	13 40 14.4	39 18.6	+ 55.8	26	155	Hn.
Feb. 10	do	15 40 49	− 4.9	15 40 44.1	40 8.1	+ 36.0	26	173	Hn.
17	do	17 34 15	− 27.1	17 33 47.9	33 24.8	+ 23.1	5	30	Hn.
28	do	8 24 29.5	− 42.4	8 23 47.1	23 29.5	+ 17.6	26	155	Hn.
Mar. 30	Re-appearance . .	13 11 33.2	− 33 23.0	12 38 10.2	38 12.4	− 2.2	26	173	Hn.
May 8	do	14 13 9.2	− 37 0.6	11 6 8.6	6 25.5	− 16.9	26	392	Hn.
July 9	do	9 51 36	+ 19.7	9 51 55.7	50 9.9	+ 105.8	9.6	?	Hn.
25	do	8 06 29.0	+ 1 14.9	8 7 43.9	8 33.4	− 49.5	26	?	Hn.

July 9. Very poor observation; planet low in clouds, and satellite faint.
July 25 Through clouds, but observation pretty satisfactory.

NOTE.—Those observations with aperture of 26 inches were taken with great telescope; those with 9.6 with small equatorial; that with 5 inches with finder to great telescope.

RESULTS OF OBSERVATIONS OF THE SATELLITES OF SATURN.

MIMAS.

Date.	Washington Mean Time.	Position Angle.	No.	Wt.	Washington Mean Time.	Distance.	No.	Wt.	Observer.	Remarks.
1874.	h. m.	°			h. m.	r.				
Sept. 2	9 53	274.7	2	2	10 12	2.856	2	2	N.	
26	10 12	92.9	4	2	10 1	2.700	3	2	N.	
Oct. 15	7 8	94.8	2	2	7 17	2.714	1	2	N.	

RESULTS OF OBSERVATIONS OF THE SATELLITES OF SATURN—Continued.

ENCELADUS.

Date.	Washington Mean Time.	Position Angle.	No.	Wt.	Washington Mean Time.	Distance.	No.	Wt.	Observer.	Remarks.
1874.	h. m.	°			h. m.	r.				
Aug. 29	9 56	268.3	3	.	10 35	3.346	2	.	N.	
31	10 23	85.1	3	.	10 31	2.982	2	.	N.	
Sept. 2	9 58	252.4	2	.	10 5	2.304	2	.	N.	
22	8 54	86.6	3	.	9 30	3.209	2	.	N.	
23	7 59	291.0	3	.	8 32	2.640	2	.	N.	
24	9 16	260.3	3	.	10 4	2.981	2	.	N.	
25	7 56	105.5	3	.	8 54	2.980	2	.	N.	
26	8 4	55.4	3	3	8 44	1.825	2	3	N.	
Oct. 1	8 25	272.8	3	.	9 23	3.502	1	.	N.	
3	7 23	82.5	2	.	8 30	3.142	2	.	N.	
14	7 37	89.3	2	.	8 22	3.193	2	.	N.	
15	7 26	300.2	2	.	7 48	2.087	2	.	N.	
17	8 12	115.7	2	1	. .	. .	.	.	Hn.	

TETHYS.

		°				r.				
Aug. 29	9 50	299.0	2	.	10 27	2.561	2	.	N.	
31	9 28	320.1	3	.	10 8	1.663	2	.	N.	
Sept. 2	9 13	13.5	2	.	9 47	1.377	2	.	N.	
3	8 42	213.8	2	.	9 19	1.639	2	.	N.	
22	8 32	221.7	3	.	9 8	2.773	2	.	N.	
23	8 19	77.9	3	.	9 0	3.230	3	.	N.	
24	9 4	266.6	3	.	9 43	3.959	2	.	N.	
25	7 59	87.4	2	.	9 0	4.012	2	.	N.	
26	8 35	272.3	3	.	9 41	4.897	2	.	N.	
Oct. 1	8 19	109.8	3	.	9 17	3.330	2	.	N.	
3	7 17	116.4	2	.	8 23	2.602	2	.	N.	
13	7 38	270.5	3	.	8 14	4.100	2	.	N.	
14	7 34	93.9	2	.	8 6	4.212	2	.	N.	
15	7 30	277.4	2	.	7 54	4.257	2	.	N.	
17	7 18	283.8	4	.	8 15	3.860	3	.	Hn.	
20	6 38	114.3	4	.	7 6	3.019	3	.	Hn.	
22	6 49	134.2	3	1	. .	. .	.	.	Hn.	
23	6 46	330.9	5	.	6 56	1.446	3	.	Hn.	

DIONE.

		°				r.				
Aug. 29	10 3	107.3	3	.	10 42	5.024	2	.	N.	
31	9 35	56.8	3	.	10 14	2.779	2	.	N.	
Sept. 2	9 8	280.1	3	.	9 41	5.697	2	.	N.	
3	8 30	82.2	2	.	9 0	4.590	2	.	N.	
22	8 39	38.0	3	.	9 15	3.350	2	.	N.	
23	8 6	135.5	3	.	8 40	2.488	2	.	N.	
24	8 57	284.7	3	.	9 32	5.040	2	.	N.	
25	8 3	87.4	2	.	9 4	5.164	2	.	N.	
26	8 20	226.1	3	.	9 21	3.060	2	.	N.	
Oct. 1	8 13	112.6	3	.	9 10	4.096	2	.	N.	
3	7 12	66.0	2	.	8 17	3.436	2	.	N.	
13	7 39	276.0	3	.	. .	. .	.	.	Hn.	
	. .	. .	.	.	8 19	5.462	2	.	N.	
14	7 31	74.1	2	.	8 0	3.659	2	.	N.	
15	7 34	156.1	2	.	8 0	1.891	2	.	N.	
17	7 8	90.0	4	.	7 47	5.255	3	.	Hn.	
20	6 45	101.1	3	.	7 26	5.270	4	.	Hn.	
22	6 38	19.7	5	1	. .	. .	.	.	Hn.	
23	7 21	117.8	3	4	. .	. .	.	.	Hn.	
	. .	. .	.	.	7 43	3.612	2	.	Hn.	

RESULTS OF OBSERVATIONS OF THE SATELLITES OF SATURN—Continued.

RHEA.

Date.	Washington Mean Time.	Position Angle.	No.	Wt.	Washington Mean Time.	Distance.	No.	Wt.	Observer.	Remarks.
1874.	h. m.	°			h. m.	r.				
Aug. 29	9 45	287.6	3	.	10 19	6.705	2	.	N.	
31	9 22	99.96	3	.	9 59	7.852	2	.	N.	
Sept. 2	9 4	273.36	3	.	9 34	8.039	2	.	N.	
3	8 36	312.73	2	.	9 9	3.736	2	.	N.	
22	8 48	83.3	3	.	9 23	6.562	2	.	N.	
23	8 12	112.1	3	.	8 48	6.090	2	.	N.	
24	9 9	251.5	3	.	9 52	4.987	2	.	N.	
25	7 51	282.8	3	.	8 48	7.390	2	.	N.	
26	8 15	34.7	3	.	9 16	2.953	2	.	N.	
Oct. 1	8 7	80.8	3	.	9 3	6.212	2	.	N.	
3	7 9	241.6	2	.	8 10	4.300	2	.	N.	
13	. .	. .	.	.	. .	. .	.	.	.	RHEA *precedes* IAPETUS 40ˢ.54 at 22ʰ 23ᵐ sidereal time, from 2 transits over 3 wires.
13	7 42	280.8	3	.	8 25	7.411	2	.	N.	
13	. .	. .	.	.	. .	. .	.	.	.	RHEA *precedes* SATURN 4ˢ.92 at 22ʰ 25ᵐ sidereal time, from 2 transits over 3 wires.
14	7 27	11.4	3	.	7 54	2.424	2	.	N.	
15	7 37	94.4	2	.	8 15	7.578	2	.	N.	
17	7 25	267.1	2	.	. .	. .	.	.	Hn.	
20	6 52	106.8	3	.	7 44	6.233	3	.	Hn.	
22	6 57	278.7	3	4	. .	. .	.	.	Hn.	
23	6 38	354.4	3	.	7 11	2.342	3	.	Hn.	
26	6 55	264.7	3	.	7 20	6.405	3	.	.	

TITAN.

		°				r.				
Aug. 29	10 9	185.4	3	.	10 51	5.966	2	.	N.	
31	9 15	238.80	3	.	9 46	13.650	3	.	N.	
Sept. 1	9 24	268.96	3	.	9 35	17.193	2	.	N.	
2	8 55	276.30	3	.	9 26	18.414	2	.	N.	
3	8 24	284.06	3	.	8 48	17.009	2	.	N.	
22	9 1	25.8	3	.	9 37	5.945	2	.	N.	
23	8 24	67.1	3	.	9 11	10.218	3	.	N.	
24	9 25	83.3	3	.	10 13	15.050	3	.	N.	
25	8 22	91.7	3	.	8 39	17.829	3	.	N.	
26	8 29	98.7	3	.	9 32	18.494	3	.	N.	
Oct. 1	8 0	240.6	3	.	8 54	9.113	2	.	N.	
2	8 1	259.5	2	.	8 20	13.563	3	.	N.	
3	7 3	269.5	3	.	7 45	16.720	3	.	N.	
12	. .	. .	.	.	. .	. .	.	.	.	TITAN *follows* SATURN 12ˢ.46 at 22ʰ 32ᵐ sidereal time, from 4 transits over 3 wires.
13	7 51	107.3	3	.	8 32	16.254	2	.	N.	
14	7 44	116.9	3	.	8 13	12.560	3	.	N.	
15	7 41	138.0	3	.	8 7	7.985	3	.	N.	
17	7 31	241.5	3	.	. .	. .	.	.	Hn.	
19	8 37	270.53	3	.	8 44	16.414	3	.	N.	
20	8 37	277.96	3	.	8 25	14.638	5	.	N.	
23	7 27	323.72	3	.	. .	. .	.	.	Hn.	
	. .	. .	.	.	7 50	10.436	3	.	N.	
27	7 35	92.22	3	.	7 42	17.031	6	.	N.	

HYPERION.

		°				r.				
July 14*	13 12	132.2	2	.	13 2	9.940	1	.	N.	*Possibly July 13.
Oct. 2	8 32	93.7	3	.	8 36	23.788	3	.	N.	
3	7 28	98.0	2	.	8 5	23.339	1	.	N.	

RESULTS OF OBSERVATIONS OF THE SATELLITES OF SATURN—Continued.

JAPETUS.

Date.	Washington Mean Time.	Position Angle.	No.	Wt.	Washington Mean Time.	Distance.	No.	Wt.	Observer,	Remarks.
1874.	h. m.	°			h. m.	r.				
Sept. 26	8 9	54.1	3	3	8 53	7.897	3	3	N.	
Oct. 1	7 48	84.0	2	.	8 42	26.424	2	.	N.	
2	7 56	85.2	2	.	8 7	29.961	4	.	N.	
3	7 38	86.5	3	.	7 56	33.135	5	.	N.	
12	. .	. .	.	.	. .	. .	.	.	.	JAPETUS *follows* SATURN 35ˢ.47 at 22ʰ 22ᵐ sidereal time, from 10 transits over 3 wires.
13	8 3	92.88	2	.	. .	. .	.	.	N.	
13	. .	. .	.	.	. .	. .	.	.	.	JAPETUS *follows* SATURN 35ˢ.60 at 22ʰ 22ᵐ sidereal time, from 4 transits over 3 wires.
13	. .	. .	.	.	. .	. .	.	.	.	JAPETUS *follows* RHEA 40ˢ.54 at 22ʰ 23ᵐ sidereal time, from 2 transits over 3 wires.
14	8 40	93.28	2	.	8 30	50.326	5	.	N.	
15	8 31	93.84	2	.	8 52	50.137	6	.	N.	
19	8 30	95.84	2	.	8 15	45.536	5	.	N.	
20	8 6	96.32	2	.	8 2	43.602	5	.	N.	
23	8 3	98.37	2	.	8 16	36.387	5	.	N.	
27	7 16	103.31	4	.	7 28	24.168	5	.	N.	

RESULTS OF OBSERVATIONS OF THE SATELLITES OF URANUS.

OBERON.

Date.	Washington Mean Time.	Distance.	Number of measures.	Weight.	Position Angle.	No. of obs.	Weight.	Observer.	Date.	Washington Mean Time.	Distance.	Number of measures.	Weight.	Position Angle.	No. of obs.	Weight.	Observer.
1874.	h. m.	r.			°				1874.	h. m.	r.			°			
Jan. 8	10 33	4.396	5	3	. .	.	.	N.	Mar. 24	8 56	3.373	4	3	. .	.	.	N.
	11 4	. .	.	.	351.2	3	3	N.		9 44	. .	.	.	151.0	4	3	N.
14	10 32	4.629	4	4	. .	.	.	N.	28	9 1	4.222	4	2	. .	.	.	N.
	11 10	. .	.	.	183.3	3	3	N.		9 38	. .	.	.	22.1	4	2	N.
17	10 30	2.804	3	4	. .	.	.	N.	30	9 5	4.259	4	2	. .	.	.	N.
	11 27	. .	.	.	106.3	3	3	N.		10 18	. .	.	.	345.8	3	2	N.
Feb. 4	9 27	. .	.	.	350.3	4	3	N.	Apr. 4	8 4	4.272	4	3	. .	.	.	N.
	9 37	4.408	4	3	. .	.	.	N.		8 36	. .	.	.	197.1	4	2	N.
16	9 14	4.492	4	.	. .	.	.	N.	13	8 33	. .	.	.	337.3	2	.	P.
	9 56	. .	.	.	15.0	4	.	N.	21	8 55	. .	.	.	340.5:	3	1	Hn.
18	10 30	4.004	4	.	. .	.	.	N.	29	8 19	2.898	4	3	. .	.	.	N.
	10 53	. .	.	.	339.1	3	.	N.		8 36	. .	.	.	247.3	4	3	N.
21	9 50	3.316	3	.	235:	.	.	N.	May 7	8 17	3.770	4	4	. .	.	.	N.
										8 47	. .	.	.	31.6	4	4	N.
Mar. 10	8 22	4.178	5	3	. .	.	.	N.									
	8 55	. .	.	.	163.6	5	3	N.	8	8 56	4.315	4	3	. .	.	.	N.
										9 11	. .	.	.	10.1	4	1	N.
11	8 48	3.438	5	3	. .	.	.	N.									
	9 22	. .	.	.	139.8	5	3	N.	18	8 56	2.834	4	3	. .	.	.	N.
										9 11	. .	.	.	117.8	4	2	N.
13	9 45	3.140	3	3	. .	.	.	N.									
	10 8	. .	.	.	60.5	3	3	N.	19	8 25	2.794	4	2	. .	.	.	N.
										8 50	. .	.	.	74.9	4	4	N.
14	8 21	3.832	4	4	. .	.	.	N.									
	8 48	. .	.	.	34.5	4	3	N.	21	8 36	4.034	4	3	. .	.	.	N.
										9 1	. .	.	.	20.6	4	3	N.
20	9 36	3.324	4	4	. .	.	.	N.									
	10 15	. .	.	.	230.7	4	4	N.	22	8 25	4.337	4	2	. .	.	.	N.
										8 55	. .	.	.	3.3	4	3	N.
21	7 46	4.036	4	4	. .	.	.	N.									
	8 14	. .	.	.	208.1	4	4	N.	26	8 57.5	. .	.	.	243.5	4	2	N.

RESULTS OF OBSERVATIONS OF THE SATELLITES OF URANUS—Continued.

TITANIA.

Date.	Washington Mean Time.	Distance.	Number of measures.	Weight.	Position Angle.	No. of obs.	Weight.	Observer.
1874.	h. m.	r.			°			
Jan. 8	10 53	2.179	4	2	. .	.	.	N.
	11 10	. .	.	.	258.3	3	2	N.
14	10 59	3.406	3	.	. .	.	.	N.
	11 20	. .	.	.	11.5	3	3	N.
17	10 52	2.330	3	4	. .	.	.	N.
	11 20	. .	.	.	238.7	3	4	N.
Feb. 4	9 48	2.852	4	3	. .	.	.	N.
	10 1	. .	.	.	215.1	4	3	N.
14	11 26	3.417	4	3	. .	.	.	N.
	12 0	. .	.	.	177.6	3	3	N.
16	9 25	. .	.	.	97.3	4	.	N.
	9 41	2.092	4	3	. .	.	.	N.
18	10 11	3.451	4	3	. .	.	.	N.
	10 45	. .	.	.	7.1	3	.	N.
21	10 2	2.477	3	.	233:	.	.	N.
Mar. 10	8 41	2.182	5	3	. .	.	.	N.
	9 5	. .	.	.	259.2	5	3	N.
11	9 8	3.023	5	3	. .	.	.	N.
	9 31	. .	.	.	210.0	5	3	N.
13	9 58	2.832	3	3	. .	.	.	N.
	10 14	. .	.	.	152.0	3	3	N.
14	8 38	2.159	4	3	. .	.	.	N.
	8 55	. .	.	.	103.3	4	3	N.
20	9 49	3.192	4	4	. .	.	.	N.
	10 24	. .	.	.	200.0	4	4	N.
21	7 58	3.346	4	4	. .	.	.	N.
	8 24	. .	.	.	175.8	4	4	N.
Mar. 24	9 12	2.895	4	3	. .	.	.	N.
	9 55	. .	.	.	32.5	4	3	N.
28	9 15	2.586	4	2	. .	.	.	N.
	9 30	. .	.	.	225.8	4	2	N.
30	9 56	3.111	4	2	. .	.	.	N.
	10 16	. .	.	.	165.0	3	2	N.
Apr. 4	8 22	2.666	4	3	. .	.	.	N.
	8 47	. .	.	.	323.7	4	3	N.
13	8 1	2.397	3	2	. .	.	.	Hn.
	7 48	. .	.	.	311.9	4	2	Hn.
21	9 11	. .	.	.	118.5:	3	1	Hn.
29	7 58	3.252	4	3	. .	.	.	N.
	8 31	. .	.	.	0.1	4	2	N.
May 7	8 32	3.095	4	4	. .	.	.	N.
	8 46	. .	.	.	18.9	4	4	N.
8	8 35	3.111	4	3	. .	.	.	N.
	9 11	. .	.	.	350.2	4	2	N.
18	8 42	2.122	4	3	. .	.	.	N.
	9 8	. .	.	.	300.1	4	2	N.
19	8 38	2.246	4	4	. .	.	.	N.
	8 52	. .	.	.	239.4	4	4	N.
21	8 50	3.125	4	3	. .	.	.	N.
	9 3	. .	.	.	174.3	4	3	N.
22	8 42	2.470	4	2	. .	.	.	N.
	9 5	. .	.	.	140.3	4	1	N.
26	8 49	2.695	4	2	. .	.	.	N.

UMBRIEL.

Date.	Washington Mean Time.	Distance.	Number of measures.	Weight.	Position Angle.	No. of obs.	Weight.	Observer.
		r.			°			
Jan. 8	11 40	. .	.	.	180±2	est.	.	N.
	12 27	2.026	1	1	. .	.	.	N.
14	12 28	2.114	2	2	. .	.	.	N.
	12 42	. .	.	.	14.0	2	2	N.
Feb. 4	9 5	2.088	4	3	. .	.	.	N.
	9 18	. .	.	.	4.2	4	3	N.
14	11 32	2.019	4	.	. .	.	.	N.
18	11 45	1.911	4	.	. .	.	.	N.
Mar. 11	8 11	1.987	5	2	. .	.	.	N.
	8 30.5	. .	.	.	194.6	2	2	N.
Mar. 13	9 0	1.962	4	3	. .	.	.	N.
	9 25.6	. .	.	.	22.7	4	2	N.
20	8 19	1.805	4	2	. .	.	.	N.
	9 11.3	. .	.	.	156.1	3	1	N.
24	8 35	1.893	4	2	. .	.	.	N.
	9 36	. .	.	.	161.8	4	2	N.
May 19	9 7	2.088:	3	1	344.5	3	2	

ARIEL.

Date.	Washington Mean Time.	Distance.	Number of measures.	Weight.	Position Angle.	No. of obs.	Weight.	Observer.
		r.			°			
Jan 14	12 7	1.506	2	2	. .	.	.	N.
	12 18	. .	.	.	176.1	3	2	N.
28	10 50.5	1.442	5	3	. .	.	.	N.
	11 6	. .	.	.	351.1	5	3	N.
Feb. 21	9 14	1.456	3	2	. .	.	.	N.
Mar. 14	9 42	1.297	.	.	. .	.	.	N.
	9 54	. .	4	3	28.1	4	2	N.
24	10 19	1.234	.	.	. .	.	.	N.
	10 26	. .	3	1	38.9	3	2	P.

RESULTS OF OBSERVATIONS OF THE SATELLITE OF NEPTUNE.

Date.	Washington Mean Time.	Distance.	Number of measures.	Weight.	Position Angle.	No. of obs.	Weight.	Observer.
1874.	h. m.	r.			°			
Jan. 2	7 4	1.564	5	4	. .	.	.	N.
	7 24	. .	.	.	220.8	5	4	N.
	7 48	1.574	5	4	. .	.	.	N.
3	6 50	1.331	4	2	. .	.	.	N.
8	7 55	1.626	5	3	. .	.	.	N.
	8 12	. .	.	.	217.8	5	3	N.
	8 28	1.662	5	2	. .	.	.	N.
9	7 4	1.204	3	2	. .	.	.	N.
12	7 30	1.132	1	2	. .		.	N.
14	7 0	1.664	5	4	. .		.	N.
	7 12	. .	.	.	216.5	5	3	N.
	7 26	1.657	5	3	. .	.	.	N.
15	6 45	1.058	5	2	. .	.	.	N.
	7 0	. .	.	.	197.3	5	1	N.
	7 17	1.055	5	2	. .	.	.	N.
	7 27	. .	.	.	197.9	5	2	N.
17	7 14	1.625	5	5	. .	.	.	N.
	7 29	. .	.	.	36.6	5	4	N.
	7 50	1.623	5	5	. .	.	.	N.
29	7 5	1.606	5	2	. .	.	.	N.
	7 20	. .	.	.	34.1	5	2	N.
	7 39	1.642	5	2	. .	.	.	N.
31	7 23	1.181	3	2	. .	.	.	N.
Feb. 4	7 11	1.536	5	3	. .	.	.	N.
	7 24	. .	.	.	31.9	5	3	N.
	8 12	1.522	5	3	. .	.	.	N.
10	7 8	1.465	5	1	. .	.	.	N.
	7 26	. .	.	.	31.3	5	3	N.
	7 42	1.461	2	1	. .	.	.	N.
16	7 18	1.375	1	.	. .	.	.	N.
July 19	15 40	. .	.	.	358.8	4	2	N.
29	15 21	1.400	5	2	. .	.	.	N.
	15 38	. .	.	.	51.3	5	2	N.
	15 52	1.422	5	3	. .	.	.	N.
30	15 14	1.516	5	3	. .	.	.	N.
	15 29	. .	.	.	30.3	5	3	N.
	15 42	1.495	5	3	. .	.	.	N.
Aug. 11	15 42	1.365	3	2	. .	.	.	Hn.
	15 13	. .	.	.	21.5	5	2	Hn.
13	14 27	1.672	3	1	. .	.	.	Hn.
	13 42	. .	.	.	223.1	8	1	Hn.
17	14 13	. .	.	.	20.2	6	1	Hn.
	14 54	. .	.	.	18.1	3	2	Hn.
19	14 47	1.739	5½	1	. .	.	.	Hn.
	13 56	. .	.	.	221.7	6	4	Hn.
Sept. 3	13 33	1.688	5	3	. .	.	.	N.
	13 52	. .	.	.	36.4	5	3	N.
	14 9	1.685	5	4	. .	.	.	N.
5	14 6	1.123	5	4	. .	.	.	N.
	14 21	. .	.	.	235.5	5	4	N.
	14 32	1.166	2	3	. .	.	.	N.
9	12 52	1.663	4	3	. .	.	.	N.
	13 13	. .	.	.	35.1	5	3	N.
	13 32	1.652	4	3	. .	.	.	N.
Sept. 10	12 44	. .	.	.	357.7	2	.	N.
18	13 12	1.557	4	3	. .	.	.	N.
	13 30	. .	.	.	209.2	5	3	N.
	13 45	1.552	4	4	. .	.	.	N.
21	10 56	1.588	4	3	. .	.	.	N.
	11 9	. .	.	.	31.2	5	3	N.
	11 22	1.589	4	3	. .	.	.	N.
23	11 2	1.389	4	3	. .	.	.	N.
	11 12	. .	.	.	228.9	5	4	N.
	11 25	1.398	4	4	. .	.	.	N.
24	10 52	1.552	4	3	. .	.	.	N.
	11 20	. .	.	.	209.4	4	3	N.
	11 32	1.534	4	3	. .	.	.	N.
Oct. 12	10 29	1.233	4	.	. .	.	.	N.
	10 41	. .	.	.	199.1	5	.	N.
	10 52	1.220	3½	.	. .	.	.	N.
14	9 58	1.688	4	.	. .	.	.	N.
	10 12	. .	.	.	40.8	5	.	N.
	10 21	1.682	4	.	. .	.	.	N.
15	9 30	1.216	3	5	. .	.	.	N.
	9 43	. .	.	.	20.6	5	4	N.
	9 56	1.193	4	5	. .	.	.	N.
16	10 36	0.761	3	.	. .	.	.	N.
	10 58	. .	.	.	249.7	5	.	N.
17	9 38	1.714	4	1	. .	.	.	Hn.
	9 58	. .	.	.	220.3	4	3	Hn.
	10 14	1.722	3	2	. .	.	.	Hn.
19	9 55	0.792	3	2	. .	.	.	N.
	10 10	. .	.	.	67.7	5	2	N.
20	9 14	1.698	5	4	. .	.	.	N.
	9 26	. .	.	.	39.0	5	5	N.
	9 38	1.702	5	3	. .	.	.	N.
22	9 46	0.870	3	2	. .	.	.	N.
	9 55	. .	.	.	244.9	5	3	N.
	10 3	0.877	3	.	. .	.	.	N.
26	9 49	1.718	4	.	. .	.	.	N.
	10 0	. .	.	.	36.7	5	.	N.
	10 9	1.723	3½	.	. .	.	.	N.
27	9 18	0.913	3	2	. .	.	.	N.
	9 30	. .	.	.	10.2	5	.	N.
	9 41	0.909	1	1	. .	.	.	N.
Nov. 13	9 54	1.576	4	3	. .	.	.	N.
	10 15	. .	.	.	28.5	5	3	N.
	10 22	. .	1½	.	. .	.	.	N.
16	8 38	1.550	4	4	. .	.	.	N.
	8 50	. .	.	.	208.9	5	3	N.
	9 17	1.540	5	4	. .	.	.	N.
25	8 52	1.398	4	4	. .	.	.	N.
	9 10	. .	.	.	24.6	5	4	N.
	9 28	1.367	4	4	. .	.	.	N.
26	9 11	0.495	3	2	. .	.	.	N.
	9 32	. .	.	.	273.9	7	2	N.
	9 50	0.533	2	.	. .	.	.	N.
27	9 18	1.580	4	4	. .	.	.	N.
	9 48	. .	.	.	221.4	5	4	N.
	10 4	1.608	1	5	. .	.	.	N.

RESULTS OF OBSERVATIONS OF THE SATELLITE OF NEPTUNE—Continued.

Date	Washington Mean Time.	Distance.	Number of measures.	Weight.	Position Angle.	No. of obs.	Weight.	Observer.	Date.	Washington Mean Time.	Distance.	Number of measures.	Weight.	Position Angle.	No. of obs.	Weight.	Observer.
1874.	h. m.	r.			°				1874.	h. m.	r.			°			
Nov. 27	10 23	1.610	3	5	. .	.	.	N.	Dec. 9	8 2	1.633	4	2	. .	.	.	N.
	10 32	1.612	3	5	. .	.	.	N.		8 28	. .	.	.	219.7	5	2	N.
30	6 58	1.593	4	3	. .	.	.	N.		8 38	1.633	4	2	. .	.	.	N.
Dec. 4	7 42	1.218	4	.	. .	.	.	N.	15	8 21	1.656	4	3	. .	.	.	N.
	7 52	. .	.	.	201.7(?)	5	.	N.		8 34	. .	.	.	216.5	5	3	N.
	8 6	1.217	4	.	. .	.	.	N.		8 44	1.663	4	3	. .	.	.	N.
5	8 52	0.661	3½	.	. .	.	.	N.	21	8 3	1.689	4	1	. .	.	.	Hn.
										7 38	. .	.	.	212.6	5	2	Hn.
8	8 36	0.724	4	.	. .	.	.	N.									
	8 45	. .	.	.	250.2	5	.	N.	24	7 39	1.642	5	3	. .	.	.	Hn.
	8 56	0.735	4	.	. .	.	.	N.		7 4	. .	.	.	31.5	5	3	Hn.

RESULTS OF MEASURES OF DOUBLE STARS.

Date.	Name of Star.	Approx. R. A.	Approx. N. P. D.	Position Angle.	Number of measures.	Distance.	Number of measures.	Observer.	Remarks.
1874.		h. m.	° ′	°		″			
Nov. 27	B. A. C. 586 = Σ 186.	1 49.2	88 46	325.7	4	0.23	2	N.	Definition superb; the stars not completely separated.
Jan. 2	γ^2 *Andromedæ* . . .	1 54.7	48 24	109.3	4	0.53	2	N.	The following star the smaller.
14	*Sirius* and companion	6 39.6	106 33	58.7	3	12.05	4	N.	
Feb. 11				59.8	4	11.52	4	N.	
18				60.6	5	11.56	5	N.	
21				58.9	5	11.74	5	N.	
Mar. 10				59.7	5	11.48	5	N.	
11				59.0	5	. .	.	Hn.	
13				58.6	5	10.99	3	Hn. & N.	
20				. .	.	11.26	4	N.	
24				58.3	5	11.14	5	N.	
25				57.6	5	11.04	4	Hall.	
26				58.5	5	11.17	5	Hall.	
27				58.7	5	11.27	5	N.	
Jan. 2	*Procyon* and companion	7 32.8	84 27	311.8	5	44.59	3	N.	
June 22	*v Scorpii*, A and B .	16 5.1	109 9	5.2	4	. .	.	N.	South star the larger.
July 17	A to $\frac{C+D}{2}$. .	. .	. .	338.2	3	. .	.	Hn.	Weight, 3.
17	D and C . . .	. .	. .	44.4	3	. .	.	Hn.	Weight, 4.
Sept. 1	λ *Ophiuchi*	16 24.6	87 45	33.7	4	1.74	2	N.	Distance quite satisfactory.
2				34.4	3	1.80	2	N.	Weight, 2.
Aug. 26	ξ *Herculis*	16 36.7	58 11	157.4	4	1.11	1	N.	Distance hardly better than an estimate.
31				155.5	4	1.34	3	N.	
Sept. 24	20 *Draconis* . . .	16 55.6	24 42	44.0 224.0	3	. .	.	N.	Too close to measure distances, but s. f. star seemed the smaller.
Aug. 31	Σ 2173	17 24.2	90 55	327.2	3	1.07	2	N.	Weight 4 for P.; weight 3 for D.
Sept. 1				330.4	4	1.10	2	N.	Weight 2 for P.; weight 1 for D.
Sept. 24	Σ 2203	17 37.5	48 16	325.8	3	0.89	2	N.	
Aug. 29	Σ 2215	17 41.4	72 14	296.5	4	0.91	3	N.	Weight, 4.
June 13	μ^2 *Herculis*	17 41.6	62 11	202.8	4	. .	.	N.	
17				199.1	5	. .	.	N.	Weight, 2.
22				205.0	5	0.71	3	N.	Stars finely separated; south star the smaller.
July 6				202.8	4	0.80	3	N.	Weight, 4.
Sept. 21	O. Σ 338	17 46.3	74 38	205.3	4	0.85	2	N.	Star hardly separated.
Aug. 27	Sh 379	17 53.8	113 2						
	A and B . . .	. .	. .	211.2	2	. .	.	Hn.	
	A and C . . .	. .	. .	20.4	3	. .	.	Hn.	
	B and E . . .	. .	. .	194.3	2	. .	.	Hn.	
	B and D . . .	. .	. .	282.1	2	2.65	2	Hn.	

RESULTS OF MEASURES OF DOUBLE STARS—Continued.

Date.	Name of Star.	Approx. R. A.	Approx. N. P. D.	Position Angle.	Number of measures.	Distance.	Number of measures.	Observer.	Remarks.
1874.		h. m.	° ′	°		″			
Aug. 28	Σ 2315	18 20.1	62 42	248.2	3	0.3(est.)	.	N.	
29				253.1	4	. .	.	N.	Elongation barely perceptible.
Sept. 9				249.7	4	0.39	2	N.	Weight, 4.
7	P,XVIII,132 = OΣ359	18 30.3	66 30	353.3	3	0.65	2	N.	
9				352.9	3	0.63	2	N.	Weight, 4.
June 24	*α Lyræ* and companion	18 32.7	51 20	154.2	3	. .	.	Hn.	Weight, 4.
26				154.1	3	47.75	3	Hn.	
Sept. 21	Σ 2367	18 36.5	59 50	68.6	3	0.3(est.)	.	N.	
22				67.0	3	0.37	1	N.	Distance uncertain.
Sept. 7	Σ 2402	18 44.0	79 26	205.7	4	1.09	2	N.	
9				204.5	3	1.13	2	N.	
Sept. 10	Σ 2409	18 46.3	76 35	34.2	4	1.04	2	N.	
12				34.9	3	0.98	2	N.	Weight, 4.
Sept. 10	Σ 2412	18 46.8	76 3	55.8	3	1.38	2	N.	6^m * 9′ s. p.
Aug. 31	Σ 2422	18 52.0	64 0	98.2	4	1.03	2	N.	
Sept. 1				96.5	3	0.92	2	N.	Weight 4 for P.; weight 3 for D
Sept. 19	OΣ 365.	18 52.3	46 0	83.6 or 263.6	1	3.18	1	N.	Weight, 2.
June 13	*γ Lyræ*	18 54.0	57 35	297.8	4	11.47	2	N.	Quadruple distances.
13						12.72	2	N.	Double distances.
Aug. 4						13.21	2	N.	Double distances.
4						12.52	2	N.	Quadruple distances.
Oct. 22	*ζ Aquilæ*	18 57.6	76 23	58.9	2	5.53	2	N.	
Sept. 10	Σ 2454	19 1.3	59 45	233.0	4	0.92	1	N.	
12				230.2	3	0.85	2	N.	Weight, 4.
Sept. 2	S. W. B. 139 . . .	19 7.2	73 21	141.9	3	0 83	3	N.	
12	59 *Aquilæ*	. .	. .	139.6	3	0.76	2	N.	
Sept. 23	OΣ 368	19 10.3	74 3	235.6	3	1.84	2	N.	Weight, 4.
Sept. 19	OΣ 371.	19 11.0	62 46	154.0	3	0.96	2	N.	Weight, 3.
Sept. 21	OΣ 375	19 29.1	72 10	144.8	3	0.72	1	N.	Weight, 1.
22				143.9	3	0.63	2	N.	Weight 3 for P.; weight 1 for D.
Sept. 2	Σ 2556 . . .	19 34.4	68 4	167.5	3	0.69	2	N.	Magnitudes about the same.
9				167.8	3	0.57	2	N.	Weight, 3.
Sept. 7	*χ Aquilæ* = OΣ 380 .	19 36.6	78 28	78.2	3	0.8(est.)	.	N.	
12				76.7	3	0.51	2	N.	
Sept. 22	OΣ 382	19 36.8	62 57	359.1	3	0.44	2	N.	
23				355.9	3	0.41	2	N.	
Sept. 10	OΣ 383	19 38.7	49 34	23.9	4	0.87	2	N.	
19				21.3	3	0.97	2	N.	
21				27.4	3	0.72	2	N.	Weight, 2.
Sept. 9	OΣ 384	19 39.4	52 0	193.9	3	1.04	3	N.	Weight, 4.
21				196.6	3	1.08	2	N.	Weight, 1.
Sept. 23	A. C. 16	19 53.0	63 1	241.4	3	0.45	2	N.	
Sept. 21	16 *Vulpeculæ* . . .	19 55.7	65 29	92.1	3	0.69	2	N.	
23	OΣ 395	. .	. .	90.7	3	0.65	2	N.	
	a^{2} *Capricorni*								
Aug. 19	A to $\frac{B+C}{2}$. .	20 11	102 56	149.5	5	. .	.	Hn.	Weight, 1. Following star of companion the larger.
19	B. and C. . . .	. .	. .	57.6	5	1.72	3	Hn.	Weight, 2.
27	A to $\frac{B+C}{2}$. .	. .	. .	145.1	5	. .	.	Hn.	Weight, 3.
28	B. and C. . . .	. .	. .	58.6	3	1.24	1	N.	

RESULTS OF MEASURES OF DOUBLE STARS—Continued.

Date.	Name of Star.	Approx. R. A.	Approx. N. P. D.	Position Angle.	Number of measures.	Distance.	Number of measures.	Observer.	Remarks.
		h. m.	° ′	°		″			
Sept. 23	O Σ 407	20 25.2	79 10	210.6	3	0.57	2	N.	Another star, same magnitude, less than 1′ distant.
Sept. 1	1 *Delphini*	20 28.	80 26	169.7	3	0.70	2	N.	
23				170.3	3	0.58	2	N.	
Sept. 10	*β Delphini*	20 31.9	75 48	13.9	2	. .	.	N.	Image very bad.
12				12.7	3	0.49	2	N.	
21				14.3	4	. .	.	N.	No distance possible.
Sept. 21	O Σ 418	20 49.7	57 47	110.4	3	1.04	2	N.	Weight, 3.
Oct. 23	*ε Equulei* . . .	20 51.8	86 11	296.6	3	1.16	2	N.	
Oct. 22	*τ Cygni*	21 9.8	52 30	164.5	5	1.24	1	N.	Distance hardly better than an estimate.
Nov. 16				160.8	3	0.97	2	N.	
16	τ^3 *Cygni*. . . .	. .	. .	81.7 or 261.7	2	15.10	1	N.	
Sept. 21	S. W. B. 64 = Σ 2793 .	21 19	81 8	244.8	4	0.64	2	N.	
Sept. 21	O Σ 448	21 35.5	61 13	243.3	3	0.80	2	N.	Weight, 3.

OCCULTATIONS, 1874.

Date.	Object.	Phase.	Chronometer or Clock Time.	Correction to Chronom.	Washington Mean Time.	Magnitude.	Observer.	Aperture of Telescope.	Remarks.
1874.			h. m. s.	m. s.	h. m. s.			in.	
Aug. 20	α SCORPII . . .	Immersion	17 6 6.95	— 28.75	7 9 0.6	3½	Hn.	26	Weight, 5. Immersion of companion not observable.
Sept. 18	ANON. (1) . .	Immersion	7 50 18.5	+ 1 26.2	7 51 44.7	7	N.	9.62	
	ANON. (2) . .	Immersion	7 53 27.0	+ 1 26.2	7 54 53.2	8½	N.	9.62	
	ARG. 17316 . .	Immersion	8 10 57.7	+ 1 26.2	8 12 23.9	7	N.	9.62	
	ANON. (4) . .	Immersion	8 12 9.0.	+ 1 26.2	8 13 35.2	7	N.	9.62	
	ARG. 17313 . .	Immersion	8 16 25.3	+ 1 26.2	8 17 51.5	9	N.	9.62	
19	ANON. (1) . .	Immersion	7 28 9	+ 1 25.11	7 29 34.1	9	N.	9.62?	
	M. Z. 47, 21. .	Immersion	7 37 41.8	+ 1 25.11	7 39 6.9	7	N.	9.62?	
	ANON. (3) . .	Immersion	7 45 31.5:	+ 1 25.11	7 46 56.6:	8	N.	9.62?	
20	ARG. 20008 . .	Immersion	8 47 10.7	+ 1 24.52	8 48 35.2	7–8	T.	9.62?	
21	B. A. C. 7237 .	Immersion	10 30 9.5	+ 1 25.52*	10 31 35.0	. .	T.	9.62?	*Should be + 1m 23s.52 ??
Oct. 1	49 AURIGÆ. . .	Immersion	2 11 35.9 ± 10	+ 26.84	13 28 47.5 ± 10	. .	Hn.	26	Star disappeared in the glare about the moon's limb; time may be wrong 10s, from this cause.
	49 AURIGÆ. . .	Emersion.	2 50 22.2	+ 26.84	14 7 27.4	. .	Hn.	26	Weight, 4.
3	ANON. (1) . .	Immersion	14 27 47.5 ± 1.5	+ 1 5.98	14 28 53.5 ± 1.5	7–8	N.	(?)	No one of these is a proper occultation, the stars being gradually lost in moon's rays as she touched them.
	ANON. (2) . .	Immersion	14 42 39 ± 1.5	+ 1 5.98	14 43 45.0 ± 1.5	7–8	N.	(?)	
	ANON. (3) . .	Immersion	14 42 39 ± 1.5	+ 1 5.98	14 43 45.0 ± 1.5	. .	N.	(?)	
	32 CANCRI . . .	Emersion.	14 46 30 ± 0.5	+ 1 5.98	14 47 36.0 ± 0.5	. .	N.	5	Observed in finder.
22	4 CETI. . . .	Immersion	0 34 58.0 ± 0.3	+ 8.6:*	10 29 33.2 ± 0.3	6	Hn.	26	*Clock correction on this date *may* be about 0s.1 wrong.
	5 CETI. . . .	Immersion	0 55 8.4 ± 0.5	+ 8.6:	10 49 40.4 ± 0.5	. .	Hn.	26	
	B. A. C. 5 . .	Immersion	1 22 40.45	+ 8.6:	11 17 8.1 ± 0.1	. .	Hn.	26	Weight, 4.
Nov. 14	ANON. . . .	Immersion	7 3 19 ± 1	+ 24.6	7 3 43.6 ± 1	7	Hn.	26	Star faint when close to moon's limb; disappearance probably instantaneous.
26	ω¹ CANCRI . . .	Immersion	18 10 41.5	+ 27.2	18 11 8.7	. .	Hn.	26	Disappearance not instantaneous, but star went out in glare of moon's limb.
Dec. 18	B. A. C. 609 .	Immersion	1 41 42.6	+ 1 48.8	7 53 39.7	. .	Hn.	26	Weight, 4.
19	ρ² ARIETIS. . .	Immersion	8 2 15.5	+ 25.1	8 2 40.6	. .	T.	9.62	
	ρ³ ARIETIS. . .	Immersion	8 13 6.5	+ 25.1	8 13* 31.6	. .	T.	9.62	*One of these is probably wrong 2m.
	ρ³ ARIETIS. . .	Immersion	2 7 26.5	+ 1 54.5	8 15* 29.2	. .	Hn.	26	
23	47 GEMINORUM .	Immersion	1 43 27.1	+ 14.2	7 34 10.2	. .	Hn.	26	Weight, 1.
	47 GEMINORUM .	Emersion.	2 24 20:	+ 14.2	8 14 56.4	. .	Hn.	26	I am doubtful whether this was the star or not. The sky near moon's limb full of flying clouds.

OBSERVATIONS

OF

JUNO AND COMPARISON STARS

MADE WITH THE

NINE-AND-A-HALF-INCH EQUATORIAL.

1874.

OBSERVATIONS

OF

JUNO AND COMPARISON STARS WITH THE 9.6 INCH EQUATORIAL.

Date.	Time by Chronometer.	Micrometer. Star A.	Remarks.
1874.	h. m. s.	r.	
November 7	1 17 7	14.158	Juno and star A.
	17 55	.211	Juno on fixed wire.
	18 45	.200	A on micrometer wire 5.
	19 35	.178	A south of Juno.
	*22? 25	.215	*Should be 20^m.
	21 19	.211	
	22 5	.226	Coincidence of wire 5 and fixed wire = 13.018 from five double measures.
	22 52	.326	
	23 40	.254	
	24 32	.200	
	25 20	.416	
	26 16	.322	Chronometer correction to sidereal time = -46^s.
	1 27 2	14.486	
	Mean 1 22 13	14.262	
		Star B.	
		r.	
November 7	1 30 44	9.767	Juno and star B.
	32 2	.738	Juno on fixed wire.
	32 39	.752	B on wire 4.
	33 14	.821	B north of Juno.
	34 4	.821	
	34 33	.880	Coincidence of wire 4 and fixed wire = 29.844 from five double measures.
	35 15	.858	
	35 47	.898	
	36 18	.881	
	37 11	.896	
	1 37 44	9.874	
	Mean 1 34 30	9.835	
November 7	1 38 29	10.028	
	39 7	.028	Telescope E. of pier.
	39 38	.131	$t = 48°$ F.
	40 29	.148	
	41 7	.215	
	41 48	.252	Summary:
	42 28	.381	$13^r.018 = 199''.14$
	43 9	.396	$14^r.262 = 218''.34$
	43 47	.607	
	44 28	.555	A south of Juno $19''.20$ at $1^h\ 21^m\ 27^s$ Washington sid. time, by 13 comparisons.
	44 55	.686	
	1 45 42	10.888	
	Mean 1 42 56	10.360	$29^r.792 = 455''.73$
			$9^r.835 = 150''.57$
			B north of Juno $305''.16$ at $1^h\ 33^m\ 44^s$ (11).
			$10^r.360 = 158''.60$
			B north of Juno $297''.13$ at $1^h\ 42^m\ 10^s$ (12).
			Weight, 1. Observer, HOLDEN.

Date.	Time by Chronometer.	Micrometer. Star B.	Micrometer. Juno.	Star B—Juno.	Remarks.
1874.	h. m. s.	r.	r.	r.	
Nov. 12	0 12 6	19.352	17.990	1.362	B preceding and south of Juno. Both bisected by wire 5.
	14 55	.425	18.136	1.289	
	15 25	.488	.107	1.381	
	16 39	.550	.292	1.258	$t = 38°$ F.
	17 53	.629	.349	1.280	
	19 14	.642	.341	1.301	Chronometer correction = − 25ˢ to sidereal time.
	20 31	.646	18.328	1.318	
	24 0	.433	17.933	1.500	Weight, 2.
	25 22	.168	18.122	1.046	
	26 57	.261	17.970	1.291	B south of Juno 1ʳ.195 = 18″.30, by 16 comparisons, at 0ʰ 23ᵐ 17ˢ.
	28 11	.055	18.059	0.996	
	29 20	.278	.191	1.087	
	30 31	.470	.252	1.218	
	31 33	.188	.235	0.953	
	32 45	.299	.331	0.968	
	0 33 57	19.233	18.356	0.877	
	Mean 0 23 42	. .	. .	1.195	

Date.	Time by Chronometer.	Micrometer. Star A.	Micrometer. Star B.	Micrometer. Juno.	Star B—Juno.	Juno—Star A.	Remarks.
1874.	h. m. s.	r.	r.	r.	r.	r.	
Nov. 12	0 59 30	11.963	20.099	19.460	0.539	7.497	A north of Juno. B south of Juno.
	1 9 55	12.760	20.808	20.548	0.260	7.488	A on wire 4. B and Juno on wire 5.
	1 17 17	12.770	20.968	20.688	0.280	7.918	B south of Juno 0″.260 = 3″.97 at 1ʰ 13ᵐ 59ˢ (5).
	1 20 1	12.918	20.942	20.729	0.213	7.811	Mic. 7ʳ.763
	1 25 15	13.024	21.132	21.124	0.008	8.100	Wire 4—wire 5. . 16ʳ.774
	Mean 1 14 24	. .	. .	. .	0.260	7.763	A north of Juno 24ʳ.537 = 374″.92 at 1ʰ 13ᵐ 59ˢ 5
							Weight, 1. Observer, HOLDEN.

Date.	Time by Chronometer.	Micrometer. Juno.	Remarks.
1874.	h. m. s.	r.	
November 13	0 29 54	27.571	Star A on fixed wire. Juno on wire 5. A north of Juno.
	30 49	.585	
	31 36	.708	Coincidence, wire 5 and fixed wire = 2.013, by 7 double measures, at $t = 52°$.
	32 28	.740	
	33 12	.780	Chronometer correction = − 21ˢ.
	33 51	.761	
	34 37	.851	Star B not observed.
	35 26	.780	
	36 45	.890	All these observations are poor, although made with care. The illumination of the threads could not be made good, and the measures should be rejected
	37 25	.852	
	38 9	27.848	Coincidence:
	38 58	28.060	2ʳ.013 = 30″.81
	39 37	27.960	27ʳ.898 = 429″.15
	40 27	27.938	
	41 13	28.002	A north of Juno 396ʳ.34 at 0ʰ 39ᵐ 6ˢ (24).
	41 55	27.940	
	42 43	.922	
	44 42	27.843	
	45 34	28.052	
	46 31	.048	
	47 1	.047	
	47 30	.004	
	48 12	.166	
	0 49 9	28.210	
	Mean 0 39 29	27.898	
November 13	. . .	28.525	Star A on fixed wire. Juno on wire 5.
		.536	
		.688	$t = 44°$.
		.708	
	0 57 20	.731	Coincidence:
		.792	2ʳ.013 at 52° = 30″.81
		.771	28ʳ.712 at 44° = 439″.61
		.856	
	1 0 0	28.804	A north of Juno 408″.80 at 0ʰ 56ᵐ 59ˢ (9).
			This second set much better.
	Mean 0 57 20	28.712	Weight, 1. Observer, HOLDEN.

Date.	Time by Chronometer.	Micrometer. Star A.	Micrometer. Star B.	Micrometer. Juno.	Juno—A.	Juno—B.	Remarks.
1874.	h. m. s.	r.	r.	r.	r.	r.	
Nov. 16	0 33 2	53.308	53.665	55.356	2.048	1.691	A north of Juno. B south of Juno.
	38 5	.463	.700	.652	2.189	1.952	A on wire 2. B on wire 3. Juno on wire 2.
	44 55	.539	.800	.851	2.312	2.051	
	53 37	.874	54.155	56.178	2.304	2.023	$t = 52°$ F.
	0 59 12	.990	.227	.456	2.466	2.229	
	1 4 21	.968	.164	.452	2.684	2.488	Chronometer correction = — 5s.
	1 9 34	54.161	.447	.828	2.667	2.381	Wire 2—wire 3 . = 13r.024
	Faint clouds and haze make next three observations difficult.						B + Juno . . . = 2r.227
	1 15 3	54.380	54.432	57.018	2.638	2.586	B south of Juno = 10r.747 = 164″.49 at 1h 0m 32s (10).
	20 10	.422	.526	.162	2.740	2.636	
	1 25 14	54.459	54.475	57.212	2.752	2.737	A north of Juno 2r.480 = 37″.16 at 1h 0m 52s (10).
	Mean 1 0 37	. .	. .	. .	2.480	2.277	Images uncommonly steady = weight 5.
		Star A.	Juno.	Star B.	A—Juno.	B—Juno.	
		r.	r.	r.	r.	r.	
Nov. 21	0 55 52	47.088	45.073	45.827	2.015	0.754	A north of Juno. B south of Juno.
	1 13 59	47.947	46.032	46.620	1.915	0.588	A on wire 1. B on wire 3. Juno on wire 3.
	1 30 36	48.656	46.619	47.158*	2.037	0.439	*Star B quite faint.
	1 47 46	49.588	47.748	48.073	1.840	0.325	
	2 3 46	49.790	48.190	48.287	1.600	0.097	$t = 42°$.
							Distance between wire 1 and wire 3 = 29r.965.
							Weight, 3. Moonlight.
							Star A:
							29r.965—2r.015=426″.92
							—1r.915=428″.25
							—2r.037=426″.58
							—1r.840=428″.60
							—1r.600=433″.27
							Star B:
							0r.754= 11″.55
							0r.588= 9″.00
							0r.439= 6″.72
							0r.325= 4″.98
							0r.097= 1″.49
							Chronometer correction = 0. Observer, HOLDEN.

RECAPITULATION.

Date.	Washington Sidereal Time.	Comparison Star 1874. R. A.	Comparison Star 1874. δ	Observed Δδ Star N. or S. of Juno. (+ N.; — S.)	No. of Comparisons.	Weight. (5, good images; 1, very poor images.)	Refraction.	Final Δδ
1874.	h. m. s.	h. m. s.	° ′	″			″	″
Nov. 7	1 21 27	3 2 28.4	— 4 9.9	— 19.20	13	1	0.01	— 19.21
	1 33 44	3 2 10.4	— 4 4.3	+ 305.16	11	1	0.17	+ 305.33
	1 42 10	3 2 10.4	— 4 4.3	+ 297.13	12	1	0.16	+ 297.29
12	0 23 17	2 57 56.6	— 4 49.1	— 18.30	16	1	0.01	— 18.31
	1 13 59	2 57 56.6	— 4 49.1	— 3.97	5	1	0.00	— 3.97
	1 13 59	2 52 25.6	— 4 43.1	+ 374.92	5	1	0.22	+ 375 14
13	0 39 6	2 59 56.5	— 4 49.0	+ 396.34	24	Rejected.		
	0 56 59	2 59 56.5	— 4 49.0	+ 408.80	9	1	0.25	+ 409.05
16	1 0 32	2 52 55.2	— 5 17.2	— 164.49	10	5	0.10	— 164.59
	1 0 32	2 51 42.2	— 5 13.9	+ 37.16	10	5	0.02	+ 37.18
21	0 55 52	2 44 05.8	— 5 30.0	+ 426.92	1	3	0.27	+ 427.19
	1 13 59	2 44 05.8	— 5 30.0	+ 428.25	1	3	0.25	+ 428.50
	1 30 36	2 44 05.8	— 5 30.0	+ 426.58	1	3	0.24	+ 426.82
	1 47 46	2 44 05.8	— 5 30.0	+ 428.60	1	3	0.24	+ 428.84
	2 3 46	2 44 05.8	— 5 30.0	+ 433.27	1	3	0.24	+ 433.51
	0 55 52	2 58 41.8	— 5 37.0	— 11.55	1	3	0.01	— 11.56
	1 13 59	2 58 41.8	— 5 37.0	— 9.00	1	3	0.01	— 9.01
	1 30 36	2 58 41.8	— 5 37.0	— 6.72	1	3	0.00	— 6.72
	1 47 46	2 58 41.8	— 5 37.0	— 4.98	1	3	0.00	— 4.98
	2 3 46	2 58 41.8	— 5 37.0	— 1.49	1	3	0.00	— 1.49

The observations were all made with telescope E. of pier, and with the illumination of wires from one and the same side. Magnifying power, 132 diameters. The telescope was not in order at the time of making these observations, as it had been out of use for some months previous; and after November 21 it was found that the clamp of the declination circle was much too loose.

CORRECTIONS

TO THE

STAR-POSITIONS OF THE AMERICAN EPHEMERIS,

GIVEN BY

OBSERVATIONS WITH THE TRANSIT CIRCLE,

1874.

CORRECTIONS

TO THE

STAR-POSITIONS OF THE AMERICAN EPHEMERIS, ETC.

NOTE.—The right ascension and north-polar distance for each star are taken directly from the American Ephemeris for 1874.0.

α ANDROMEDÆ.

Right Ascension . . . 0 h. 1 m. 52.645 s.

North Polar Distance . 61° 36′ 18.″22

1874.			s.		″
Jan.	22	S.	0.00		. .
	29	F.	+ 0.12	+	0.7
Feb.	10	E.	— 0.11	+	1.2
	16	Sk.	— 0.01	+	0.3
	17	E.	— 0.15	—	0.3
Mar.	2	F.	+ 0.01		. .
April	26	F.	. .	+	0.2
July	6	Sk.	+ 0.01	+	0.2
Sept.	23	S.	+ 0.12		. .
Oct.	10	E.	— 0.03	—	0.7
	12	F.	+ 0.02	—	0.3
	16	E.	+ 0.06	—	1.7
	23	E.	+ 0.01	—	0.5
	26	Sk.	— 0.19	+	0.6
Nov.	4	E.	— 0.01	—	1.0
	7	Sk.	+ 0.01	—	0.3
Dec.	15	F.	+ 0.02	+	0.6
Mean			— 0.008	—	0.07
Div., Flex., etc. .			. .	+	1.16

γ PEGASI.

Right Ascension. . . 0 h. 6 m. 44.949 s.

North-Polar Distance . 75° 31′ 0.″49

1874.			s.		″
Jan.	22	S.	+ 0.03		. .
	29	F.	+ 0.09	+	1.7
Feb.	10	E.	— 0.11	+	0.5
	16	Sk.	— 0.07	+	0.5
	17	E.	— 0.02	+	0.7
	26	F.	. .	+	0.7
Mar.	2	F.	+ 0.04	+	0.8
April	26	F.	— 0.13	+	0.9
July	6	Sk.	. .	—	1.1
Sept.	24	Sk.	— 0.09	—	0.4
	26	F.	+ 0.05	—	0.1
Oct.	10	E.	+ 0.09	—	1.8
	12	F.	— 0.03	+	1.6
	15	E.	+ 0.07	—	0.8
	16	E.	— 0.10	—	0.4
	23	E.	— 0.02		0.0
Nov.	3	Sk.	— 0.05	—	0.4
	4	E.	— 0.05	—	1.5
	7	Sk.	— 0.02	+	0.2
Dec.	2	E.	+ 0.14	+	0.6
	15	F.	— 0.01	+	0.2
Mean			— 0.010	+	0.095
Div., Flex., etc. .			. .	+	1.22

α CASSIOPEÆ.

Right Ascension. . . 0 h. 33 m. 22.140 s.

North-Polar Distance . 34° 9′ 14.″75

1874.			s.		″
Nov.	4	E.	— 0.19	—	1.5
Dec.	2	E.	— 0.07	—	1.3
Mean			— 0.130	—	1.40
Div., Flex., etc. .			. .	+	0.67

α CASSIOPEÆ (Ref.).

1874.			s.		″
Oct.	23	E.	— 0.20	—	1.5
Div., Flex., etc. .			. .	+	0.55

β CETI.

Right Ascension. . . 0 h. 37 m. 15.794 s.

North-Polar Distance . 108° 40′ 42.″39

1874.			s.		″.
Jan.	22	S.	+ 0.04		. .
Feb.	26	F.	. .	—	3.0
Mar.	4	Sk.	+ 0.23	+	0.7
Sept.	24	Sk.	+ 0.02	—	0.3
	25	E.	+ 0.05	+	3.1
Oct.	12	F.	+ 0.11	—	0.9
	15	E.	+ 0.07	—	0.9
	16	E.	+ 0.17	+	0.2
	20	F.	+ 0.09	+	1.5
	23	E.	+ 0.17		0.0
	26	Sk.	— 0.01	+	0.7
Nov.	3	Sk.	+ 0.27	—	2.0
	4	E.	+ 0.04	—	1.4
	7	Sk.	+ 0.05	—	0.3
Dec.	1	Sk.	+ 0.08	+	0.1
	2	E.	+ 0.12	+	0.1
	5	Sk.	— 0.05		0.0
Mean			+ 0.090		. .
Div., Flex., etc. .			. .	+	1.33

21 CASSIOPEÆ, S. P.

Right Ascension. . . 0 h. 37 m. 21.693 s.

North-Polar Distance . 344° 17′ 54.″04

1874.			s.		″
May	9	F.	. .	—	5.6
Dec.	24	S.	+ 0.18		. .
Div., Flex., etc. .			. .	+	0.75

ε PISCIUM.

Right Ascension. . . 0 h. 56 m. 24.314 s.

North-Polar Distance . 82° 47′ 19.″01

1874.			s.		″
July	8	Sk.	+ 0.03	—	0.7
Sept.	25	E.	+ 0.02	—	1.0
	26	F.	+ 0.01	—	1.1
Oct.	12	F.	+ 0.08	+	0.3
	15	E.	+ 0.06	—	0.5
	16	E.	+ 0.09	—	2.1
	19	E.	— 0.01	—	2.3
	20	E.	+ 0.02	+	0.3
	22	Sk.	+ 0.14	—	1.6
	25	E.	0.00	—	2.0
	26	E.	+ 0.12	—	0.3
	29	E.	— 0.02	—	1.7
Nov.	4	E.	— 0.02	—	3.0
	6	S.	— 0.07	—	2.8
	12	E.	— 0.03	—	1.6
	13	F.	— 0.11	—	1.0
	16	E.	— 0.02	—	1.2
	27	F.	+ 0.01	—	2.7
	28	E.	+ 0.04	—	0.4
Dec.	2	E.	+ 0.03	—	0.8
	18	E.	+ 0.04	+	1.7
Mean			+ 0.020	—	1.17
Div., Flex., etc. .			. .	+	1.38

POLARIS.

Right Ascension. . . 1 h. 12 m. 39.372 s.

North-Polar Distance . 1° 21′ 45.″24

1874.			s.		″
Jan.	10	S.	+ 2.88	+	1.3
	12	E.	— 0.01δ	—	0.9
Feb.	26	F.	. .	+	1.0
Mar.	2	F.	— 3.27λ	+	1.2
	14	Sk.	— 0.77	—	0.5
	28	Sk.	— 4.12λ	—	0.6
	30	F.	— 1.56		. .
April	10	F.	. .	—	4.1
	12	Sk.	— 0.94	—	0.2
	20	Sk.	— 7.74	—	1.0
	26	F.	. .	+	2.5
	29	E.	. .	+	0.9
May	5	S.	+ 2.82λ		. .
	6	Sk.	— 2.54λ	—	1.1
	10	Sk.	— 4.48	+	0.2
	18	Sk.	+ 3.92	—	1.4
	22	Sk.	. .	—	1.2
	26	Sk.	— 2.88	+	1.0
	27	E.	— 3.35	—	4.0
June	9	E.	+ 0.18	—	0.6
July	8	Sk.	— 0.12δ, 51	+	0.1
Sept.	25	E.	+ 1.53	+	0.3
	26	F.	+ 1.67	+	0.7

Polaris—Continued.

1874.			s.		″
Oct.	12	F.	. .	+	0.8
	15.	E.	+ 3.20	—	0.1
	16	E.	. .	—	1.1
	19	E.	+ 4.07	+	0.4
	20	F.	— 2.22	+	1.5
	22	Sk.	. .	—	1.6
	23	E.	+ 2.47	—	0.7
	25	E.	. .	—	0.5
	26	Sk.	. .	+	0.7
	29	E.	. .	—	2.3
Nov.	3	Sk.	. .	—	2.1
	4	E.	. .	—	2.6
	7	Sk.	— 2.64	—	0.7
	12	E.	+ 2.17	—	0.6
	13	F.	— 1.18	+	0.6
	14	S.	— 0.61	—	2.6
	16	E.	+ 2.84	—	2.1
	21	F.	. .	—	1.0
	25	F.	— 0.68		0.0
	27	F.	— 1.48δ	—	2.2
	28	E.	. .	—	1.5
Dec.	1	Sk.	. .	—	1.8
	2	E.	. .	—	1.0
	4	F.	. .	—	1.3
	5	Sk.	. .	+	0.3
	15	F.	— 0.82δ, 51	—	0.1
	18	E.	+ 1.39	+	0.4
	21	Sk.	+ 1.95δ	—	1.6
Mean			— 0.089	—	0.60
Div., Flex, etc.			. .	+	0.77

Polaris, S. P.

	h.	m.	s.
Right Ascension. . .	1	12	39.372
North-Polar Distance .	35°	38′	14″.76

1874.			s.		″
Jan.	10	S.	+ 1.19	—	0.7
	11	Sk.	. .	—	2.6
Mar.	4	Sk.	. .	—	1.8
	7	S.	. .	—	2.3
	26	F.	. .	—	3.0
	30	F.	— 1.25	—	2.3
April	13	Sk.	— 0.43	—	0.5
	21	Sk.	— 7.09	—	0.1
	26	E.	. .	—	1.8
	29	Sk.	. .	—	0.6
May	8	E.	. .	—	1.9
	11	Sk.	— 3.73	+	0.3
	13	F.	. .	—	1.2
	19	Sk.	+ 4.70	—	0.4
	27	Sk.	— 0.79	+	0.2
	28	E.	+ 2.73	—	2.1
June	1	E.	— 4.59δ	—	2.8
	4	Sk.	. .	—	1.9
	9	E.	— 0.96	—	1.4
	13	E.	. .	—	0.3
	20	Sk.	. .	—	0.6
	21	E.	. .	—	0.9
	22	F.	— 3.32δ	—	1.7
July	19	E.	. .	—	0.5
Aug.	15	Sk.	— 6.28δ, 51	+	2.1
Sept.	9	F.	— 2.13λ		. .
	18	F.	+ 1.36λ	—	2.3
	21	E.	+ 0.52λ	—	0.9
	22	F.	— 1.25λ	—	1.9
	23	S.	— 2.46, 51		. .
	24	Sk.	— 2.43λ	—	0.7
	25	E.	+ 1.68	—	0.6
	26	F.	+ 1.47	—	1.2
Oct.	1	S.	+ 1.72δ, 51	—	1.0
	2	Sk.	+ 3.95, 51, λ		. .
	3	E.	+ 2.28δ, λ	—	1.7
	5	S.	. .	—	2.1
	9	S.	. .	—	0.1
	14	E.	+ 3.49	—	1.7
	18	E.	+ 4.79	—	2.8
	19	F.	— 1.05	—	2.7
	22	E.	+ 3.68	—	4.4
	25	Sk.	. .	+	2.3
	26	E.	. .	—	2.2

Polaris, S. P.—Continued.

1874.			s.		″
Oct.	28	S.	. .	—	0.9
Nov.	6	Sk.	— 2.80	—	1.8
	10	Sk.	. .	—	1.6
	11	E.	+ 2.57	—	2.7
	12	F.	— 0.95	+	1.1
	13	S.	— 0.22	—	1.7
	15	E.	+ 3.18	—	0.9
	20	F.	. .	—	0.8
	23	E.	+ 2.75δ	—	0.5
	24	F.	— 0.54	—	0.6
	29	S.	. .	+	0.9
Dec.	4	S.	. .	—	2.6
	14	S.	. .	+	0.8
	17	S.	. .	—	0.6
	24	S.	. .	—	0.7
Mean			+ 0.200	—	1.17
Div., Flex., etc.			. .	+	0.82

Polaris, S. P. (Ref.).

1874.			s.		″
May	30	S.	. .	—	0.5
June	1	E.	. .	—	2.3
Mean			. .	—	1.40
Div., Flex., etc.			. .	+	0.54

θ¹ Ceti.

	h.	m.	s.
Right Ascension. . .	1	17	43.535
North-Polar Distance .	98°	50′	1″.68

1874.			s.		″
Feb.	26	F.	. .	—	1.6
June	9	E.	+ 0.04	—	1.4
July	8	Sk.	+ 0.11	+	0.7
Sept.	25	E.	+ 0.10	+	0.8
	26	F.	+ 0.06	+	0.7
Oct.	12	F.	+ 0.05	+	3.3
	15	E.	+ 0.05	+	1.8
	16	E.	+ 0.04	—	1.3
	19	E.	— 0.04	+	0.2
	20	E.	+ 0.08	+	1.0
	22	Sk.	+ 0.12	—	0.3
	23	E.	+ 0.06	+	0.3
	25	E.	— 0.04	—	0.3
	26	Sk.	+ 0.09	+	1.1
	29	E.	+ 0.09	—	0.9
Nov.	4	E.	+ 0.16	—	0.7
	12	E.	— 0.02	+	0.3
	13	F.	+ 0.12	+	1.0
	16	E.	— 0.05	+	0.5
	21	F.	+ 0.10	+	0.7
	25	F.	— 0.01	+	1.0
	27	F.	+ 0.04	—	1.3
	28	E.	+ 0.01	+	1.7
Dec.	1	Sk.	+ 0.01	+	1.2
	2	E.	+ 0.04	+	2.9
	4	F.	+ 0.06	+	0.5
	5	Sk.	— 0.02	+	0.2
	18	E.	+ 0.06	+	3.3
	21	Sk.	— 0.04	+	0.3
Mean			+ 0.049	+	0.54
Div., Flex., etc.			. .	+	1.20

38 Cassiopeæ.

	h.	m.	s.
Right Ascension. . .	1	21	53.056
North-Polar Distance .	20°	23′	5″.82

1874.			s.		″
Oct.	12	F.	+ 0.19	—	1.6
Nov.	16	E.	+ 0.28	+	0.6
	28	E.	+ 0.38	+	0.2
Dec.	2	E.	+ 0.18	—	0.7
	18	E.	+ 0.53	+	1.5
Mean			+ 0.312		0.00
Div., Flex., etc.			. .	+	0.67

38 Cassiopeæ, S. P.

	h.	m.	s.
Right Ascension. . .	1	2	53.056
North-Polar Distance .	339°	36′	54″.18

1874.			s.		″
May	22	S.	+ 0.22	—	0.4
Div., Flex., etc.			. .	+	0.83

η Piscium.

	h.	m.	s.
Right Ascension. . .	1	24	44.523
North-Polar Distance .	75°	18′	14″.92

1874.			s.		″
Jan.	12	E.	. .	+	1.0
June	8	S.	+ 0.12		. .
July	8	Sk.	+ 0.08	—	0.1
Oct.	13	S.	+ 0.08	—	0.6
	15	E.	+ 0.11		0.0
	16	E.	+ 0.06	—	2.3
	19	E.	+ 0.18	—	0.5
	22	E.	0.00	+	1.5
	23	E.	+ 0.14	—	0.2
	25	E.	+ 0.09	—	0.5
	26	E.	+ 0.07	+	0.6
	29	E.	+ 0.09	—	0.9
Nov.	4	E.	+ 0.06	—	1.0
	6	S.	. .	+	0.1
	12	E.	+ 0.03	—	0.2
	16	E.	+ 0.11	+	0.5
	21	F.	+ 0.06	+	1.0
	25	F.	— 0.08	+	0.6
	27	F.	+ 0.06	—	0.2
	28	E.	+ 0.09	+	0.9
Dec.	2	E.	+ 0.08	+	1.2
	18	E.	+ 0.07	+	3.3
Mean			+ 0.075	+	0.20
Div., Flex., etc.			. .	+	1.21

o Piscium.

	h.	m.	s.
Right Ascension. . .	1	38	44.558
North-Polar Distance .	81°	28′	37″.88

1874.			s.		″
Jan.	10	S.	— 0.05		0.0
Sept.	26	F.	— 0.06	—	1.4
Oct.	12	F.	— 0.04	—	0.3
	19	E.	— 0.13	—	1.4
	20	E.	— 0.06	+	1.6
	22	E.	— 0.07	—	0.6
	25	E.	+ 0.01	—	1.7
	26	E.	— 0.04	+	0.8
	29	E.	— 0.08	—	0.8
Nov.	12	E.	— 0.13	—	1.1
	13	F.	— 0.07	—	0.4
	16	E.	— 0.03	—	1.0
	21	F.	— 0.15	—	0.7
	25	F.	— 0.17	—	0.7
	28	E.	+ 0.04	+	0.1
Dec.	2	E.	— 0.06	—	0.6
	4	F.	— 0.04	—	0.5
	14	E.	— 0.06	—	0.5
	18	E.	— 0.04	+	2.4
Mean			— 0.065	—	0.36
Div., Flex., etc.			. .	+	1.32

o Piscium (Ref.).

1874.			s.		″
Oct.	13	S.	. .	+	1.9
Dec.	1	Sk.	— 0.01	+	0.2
	5	Sk.	+ 0.04	+	2.6
Mean			+ 0.015	+	1.57
Div., Flex., etc.			. .	—	0.62

β Arietis.

Right Ascension . . . 1 h 47 m 40.937 s

North-Polar Distance . 69° 48′ 30.″77

1874.			s.		″
Jan.	12	E.	− 0.03	+	0.5
	23	Sk.	− 0.02	+	1.3
	24	E.	+ 0.08	+	0.7
Mar.	11	S.	+ 0.14	−	0.5
	28	Sk.	+ 0.07	+	0.1
April	11	F.	+ 0.10	−	1.8
May	10	Sk.	+ 0.09	+	0.6
	18	Sk.	+ 0.09	−	1.9
June	8	S.	+ 0.02		. .
	9	E.	− 0.07	+	1.1
Sept.	26	F.	− 0.05	−	0.2
Oct.	12	F.	− 0.02	+	0.8
	13	S.	+ 0.03	−	0.5
	16	E.	− 0.02	−	1.6
	19	E.	− 0.02	−	1.1
	22	Sk.	− 0.07		0.0
	23	E.	+ 0.03	−	0.3
	25	E.	+ 0.03	+	0.1
	26	E.	+ 0.09	+	0.1
	29	E.	− 0.02		0.0
Nov.	4	E.	+ 0.02	−	2.3
	12	E.	− 0.05	−	1.0
	13	F.	+ 0.07		0.0
	16	E.	+ 0.04		0.0
	21	F.	− 0.01	+	0.6
	25	F.	− 0.07	+	0.7
	28	E.	− 0.10	+	2.2
Dec.	2	E.	− 0.04	+	1.1
	14	E.	− 0.01	+	1.7
	19	F.	+ 0.01	+	0.7
	21	Sk.	− 0.07		0.0
Mean			+ 0.008	+	0.04
Div., Flex., etc. .			. .	+	1.27

50 Cassiopeæ.

Right Ascension . . . 1 h 52 m 42.888 s

North-Polar Distance . 18° 11′ 24.″90

1874.			s.		″
Sept.	26	F.	+ 0.29	−	3.2
Oct.	13	S.	+ 0.21	−	3.9
Mean			+ 0.250	−	3.55
Div., Flex., etc. .			. .	+	0.60

50 Cassiopeæ, S. P.

Right Ascension . . . 1 h 52 m 42.888 s

North-Polar Distance . 341° 48′ 35.″10

1874.			s.		″
Jan.	10	S.	0.00	−	1.0
May	22	S.	+ 0.29	+	2.1
Mean			+ 0.145	+	0.55
Div., Flex., etc. .			. .	+	0.77

α Arietis.

Right Ascension . . . 2 h 0 m 4.424 s

North-Polar Distance . 67° 8′ 3.″24

1874.			s.		″
Jan.	9	F.	− 0.03	+	0.6
	12	E.	− 0.13	+	0.8
	23	Sk.	+ 0.07	−	0.7
	24	E.	+ 0.03	−	0.5

α Arietis—Continued.

1874.			s.		″
Mar.	11	S.	+ 0.08	+	0.6
	14	Sk.	+ 0.03	+	0.2
	28	Sk.	+ 0.02	+	0.6
April	11	F.	+ 0.13	+	0.1
May	6	Sk.	+ 0.07	+	0.6
	10	Sk.	0.00	−	0.8
	18	Sk.	+ 0.03	+	0.4
	27	E.	+ 0.07	+	1.7
June	1	F.	+ 0.05	−	1.5
	8	S.	− 0.05		. .
	9	E.	− 0.02	+	0.4
Aug.	31	Sk.	− 0.05	−	2.4
Sept.	26	F.	+ 0.04	+	0.9
Oct.	12	F.	− 0.07	−	0.2
	13	S.	. .	−	2.2
	19	E.	0.00	−	0.8
	20	E.	− 0.02	+	0.5
	22	Sk.	− 0.13	−	0.9
	23	E.	+ 0.04	−	1.1
	25	E.	− 0.06	−	2.5
	26	E.	− 0.02	−	0.5
	29	E.	+ 0.02	−	2.0
Nov.	3	Sk.	− 0.15	−	1.5
	4	E.	− 0.01	−	1.2
	6	S.	− 0.08	−	4.2
	7	Sk.	+ 0.07	−	1.5
	12	E.	− 0.02	−	1.6
	14	S.	− 0.07	−	2.2
	16	E.	− 0.03	−	0.1
	21	F.	0.00	+	1.3
	28	E.	+ 0.03	+	1.9
Dec.	1	Sk.	− 0.02	−	0.9
	2	E.	− 0.09	−	1.2
	14	E.	− 0.02	−	0.9
	18	E.	− 0.06	+	1.5
	19	F.	− 0.15	+	0.2
	21	Sk.	− 0.01	−	0.1
	22	E.	0.00	+	0.6
Mean			− 0.012	−	0.45
Div., Flex., etc. .			. .	+	1.23

ξ¹ Ceti.

Right Ascension . . . 2 h 6 m 19.341 s

North-Polar Distance . 81° 44′ 43.″33

1874.			s.		″
Jan.	9	F.	+ 0.08	−	0.4
	23	Sk.	+ 0.01	−	0.5
Oct.	15	E.	+ 0.12	−	0.6
	16	E.	− 0.01	−	1.8
	20	E.	+ 0.05	+	1.1
	22	E.	+ 0.01	−	1.3
	25	E.	− 0.03	−	2.4
	26	E.	+ 0.08	−	0.2
	29	E.	+ 0.13	−	2.6
Nov.	6	S.	+ 0.03	−	2.5
	12	E.	+ 0.09	−	1.2
	13	F.	+ 0.11	−	1.5
	16	E.	+ 0.09	−	1.9
	21	F.	+ 0.11	−	1.0
	28	E.	+ 0.12	−	0.7
Dec.	2	E.	+ 0.07	−	0.1
	4	F.	+ 0.01	−	1.4
	11	E.	+ 0.12	−	1.0
	18	E.	+ 0.15	+	1.0
	19	F.	+ 0.01	−	0.7
	22	E.	+ 0.06	+	1.0
Mean			+ 0.069	−	0.89
Div., Flex., etc. .			. .	+	1.33

ξ¹ Ceti (Ref.).

1874.			s.		″
Nov.	25	F.	− 0.08	−	1.5
Div., Flex., etc. .			. .	−	0.60

ι Cassiopeæ.

Right Ascension . . . 2 h 18 m 42.512 s

North-Polar Distance . 23° 9′ 58.″28

1874.			s.		″
Jan.	14	S.	+ 0.32	−	2.8
	23	Sk.	− 0.15	−	1.8
Nov.	6	S.	+ 0.25	−	3.7
Dec.	2	E.	+ 0.42		. .
	11	E.	+ 0.09	−	1.2
	18	E.	+ 0.38	−	0.2
	19	F.	+ 0.09	−	0.8
Mean			+ 0.200	−	1.75
Div., Flex., etc. .			. .	+	0.84

ι Cassiopeæ, S. P.

Right Ascension . . . 2 h 18 m 42.512 s

North-Polar Distance . 336° 50′ 1.″72

1874.			s.		″
Mar.	7	S.	+ 0.29		. .
June	18	F.	+ 0.25	−	1.4
Mean			+ 0.270		. .
Div., Flex., etc. .			. .	+	0.80

γ¹ Ceti.

Right Ascension . . . 2 h 36 m 46.395 s

North-Polar Distance . 87° 17′ 46.″67

1874.			s.		″
Jan.	10	S.	+ 0.09	−	0.7
	14	S.	+ 0.09	−	1.1
	24	E.	+ 0.12	−	2.5
Aug.	31	Sk.	− 0.03	−	3.2
Oct.	13	S.	− 0.05		. .
	15	E.	+ 0.11	−	0.2
	20	E.	0.00	+	0.3
	22	E.	+ 0.05	−	2.0
	25	E.	+ 0.07	−	2.0
Nov.	3	Sk.	− 0.02	−	2.1
	6	S.	− 0.07	−	2.2
	7	Sk.	+ 0.02	−	0.3
	12	E.	+ 0.04	−	1.3
	13	E.	+ 0.05	+	0.2
	14	S.	0.00	−	2.0
	16	E.	+ 0.08	+	0.1
Dec.	2	E.	− 0.02		. .
	8	S.	− 0.07		. .
	14	E.	+ 0.08	−	0.1
	18	E.	+ 0.11	−	1.5
	19	F.	− 0.01	+	0.2
	22	E.	+ 0.04	+	0.7
Mean			+ 0.031	−	1.04
Div., Flex., etc. .			. .	+	1.42

α Ceti.

Right Ascension . . . 2 h 55 m 41.653 s

North-Polar Distance . 86° 24′ 21.″42

1874.			s.		″
Jan.	14	S.	0.00	−	1.3
	24	E.	+ 0.11	−	1.8
May	27	E.	+ 0.13	−	4.4
June	12	E.	− 0.08	−	2.9
	14	S.	+ 0.07	−	3.5
July	8	Sk.	+ 0.05	−	1.9
Aug.	4	E.	+ 0.08	−	0.5
	31	Sk.	− 0.03	−	3.5

α Ceti—Continued.

1874.				s.		″
Oct.	20	E.		0.00	+	0.2
	25	E.	+	0.10	—	3.5
	29	E.	—	0.03	—	2.1
Nov.	3	Sk.	+	0.04	—	3.6
	12	E.	—	0.04	—	2.5
	13	F.	+	0.09	—	1.4
Dec.	2	E.	—	0.07		. .
	9	Sk.	+	0.10	—	1.3
	14	E.	+	0.06	—	0.3
	18	E.	+	0.01	—	0.3
	22	E.	+	0.03	—	3.0
Mean			+	0.033	—	2.09
Div., Flex., etc. .				. .	+	1.44

α Ceti (Ref.).

1874.			s.		″
Nov.	27	F.	. .	+	2.2
Dec.	8	S.	. .	+	0.7
Mean			. .	+	1.45
Div., Flex., etc. .			. .	—	0.50

48 Cephei.

	h.	m.	s.
Right Ascension. . .	3	4	24.610
North-Polar Distance .	12°	43′	55.″63

1874.				s.		″
Jan.	14	S.	+	0.29	—	2.4
June	22	F.	—	0.34	—	1.9
Nov.	16	E.	+	0.37	+	0.1
Dec.	8	S.	—	0.29	—	1.5
	18	E.	+	0.31	+	1.2
Mean			+	0.068	—	0.90
Div., Flex., etc. .				. .	+	0.61

48 Cephei, S. P.

	h.	m.	s.
Right Ascension. . .	3	4	24.610
North-Polar Distance .	347°	16′	4.″37

1874.				s.		″
June	18	F.	+	0.17	—	1.3
	19	S.	+	0.05	—	1.8
July	18	E.	+	0.46	+	0.4
Mean			+	0.227	—	0.90
Div., Flex., etc. .				. .	+	0.75

ζ Arietis.

	h.	m.	s.
Right Ascension. . .	3	7	39.706
North-Polar Distance .	69°	25′	25.″47

1874.				s.		″
Jan.	12	E.	—	0.11	+	0.1
	14	S.	+	0.02	+	0.1
	15	Sk.	—	0.09	—	1.0
	24	E.	+	0.08	—	0.1
Oct.	22	E.	+	0.05	—	1.3
Nov.	13	E.	+	0.01	—	0.2
	16	E.	—	0.12	+	0.5
Dec.	18	E.	+	0.05	+	2.2
	22	E.	—	0.02	—	0.8
Mean			—	0.014	—	0.06
Div., Flex., etc. .				. .	+	1.28

α Persei.

	h.	m.	s.
Right Ascension. . .	3	15	20.118
North-Polar Distance .	40°	35′	22.″21

1874.				s.		″
Jan.	14	S.	+	0.19	—	2.7
June	12	E.	+	0.26	—	1.7
	22	E.	—	0.07	—	2.3
July	8	Sk.	+	0.15	+	1.8
Oct.	31	E.	—	0.04	—	1.0
Dec.	18	E.	+	0.10	—	0.2
	22	E.	+	0.10	—	0.5
Mean			+	0.099	—	0.94
Div., Flex., etc. .				. .	+	0.36

α Persei (Ref.).

1874.			s.		″
Dec.	1	Sk.	. .	—	2.7
	8	S.	. .	+	0.1
Mean			. .	—	1.30
Div., Flex., etc. .			. .	+	0.67

δ Persei.

	h.	m.	s.
Right Ascension. . .	3	33	57.530
North-Polar Distance .	42°	37′	3.″87

1874.				s.		° ″
Jan.	12	E.	—	0.13	—	2.0
	15	Sk.	—	0.07	—	2.1
May	31	E.	+	0.25	—	1.9
June	8	E.	+	0.25	—	2.3
	12	E.	+	0.38	—	1.7
	22	E.	+	0.13	—	2.6
	24	E.	+	0.14	—	3.1
July	8	Sk.	+	0.09	—	1.2
Dec.	8	S.	+	0.15	—	1.7
Mean			+	0.161	—	2.07
Div., Flex., etc. .				. .	+	0.30

δ Persei (Ref.).

1874.			s.		″
Nov.	27	F.	. .	—	2.6
Div., Flex., etc.			. .	+	0.68

η Tauri.

	h.	m.	s.
Right Ascension. . .	3	39	59.809
North-Polar Distance .	66°	17′	10.″52

1874.				s.		″
Jan.	12	E.	—	0.06	+	1.6
	15	Sk.	—	0.04	—	1.9
	17	Sk.	+	0.04	—	1.9
April	13	Sk.	—	0.05	—	1.7
	27	F.	+	0.04		. .
June	8	E.	+	0.06	—	0.8
	21	F.	—	0.02	—	1.8
	22	E.	+	0.04	—	2.8
	24	E.	—	0.04	—	3.4
	28	E.	—	0.03	—	2.4
July	8	Sk.		0.00	—	0.2
Aug.	4	E.	+	0.02	—	1.0
	31	Sk.	—	0.01	—	0.8
Oct.	26	E.	—	0.04	+	0.1
	31	E.	—	0.01	—	2.5
Nov.	13	F.	+	0.06	—	0.4
	16	E.	+	0.07	+	0.5
Dec.	4	F.	—	0.05	+	1.0
	5	Sk.	+	0.03	+	0.9

η Tauri—Continued.

1874.				s.		″
Dec.	8	S.	+	0.03	—	1.1
	9	Sk.	+	0.11		0.0
	19	F.	—	0.04	—	0.5
Mean			+	0.005	—	0.91
Div., Flex., etc. .				. .	+	1.21

ζ Persei.

	h.	m.	s.
Right Ascension. . .	3	46	12.897
North-Polar Distance .	58°	29′	33.″18

1874.				s.		″
Jan.	17	Sk.	—	0.09	—	1.7
April	11	F.	—	0.06	—	0.6
	13	Sk.	—	0.04	—	1.3
	30	E.		. .	—	0.6
June	12	E.	+	0.02	—	1.5
	17	F.		0.00	—	3.6
	22	E.	—	0.02	—	0.2
	24	E.	—	0.01	—	3.7
	28	E.	—	0.09	—	1.2
Aug.	4	E.	+	0.06	—	0.6
	31	Sk.	—	0.03	—	1.2
Oct.	26	Sk.	—	0.04	—	0.8
	31	E.	—	0.05	—	0.8
Nov.	13	E.	+	0.02	—	1.7
	16	E.	—	0.19	+	1.6
	21	F.		0.00	+	0.4
Dec.	4	F.	—	0.06	+	1.3
	5	Sk.	—	0.08	+	0.1
	8	S.	—	0.01	—	1.7
	9	Sk.	—	0.13	—	0.2
Mean			—	0.042	—	0.90
Div., Flex., etc. .				. .	+	1.14

γ¹ Eridani.

	h.	m.	s.
Right Ascension. . .	3	52	9.067
North-Polar Distance .	103°	52′	5.″19

1874.				s.		″
Jan.	15	Sk.	+	0.09	—	1.0
	17	Sk.	+	0.04	—	0.5
June	17	F.	+	0.17	—	2.1
	21	F.	+	0.02	—	0.1
	28	E.	+	0.17	—	1.7
Aug.	4	E.	+	0.08	—	0.1
	31	Sk.	+	0.03	+	0.6
Oct.	26	Sk.	+	0.01	+	0.6
Nov.	13	E.	—	0.02	+	1.3
	16	E.		0.00	+	0.9
Dec.	4	F.	—	0.02	+	1.3
	5	Sk.	+	0.01	—	0.7
Mean			+	0.048	—	0.12
Div., Flex., etc. .				. .	+	1.28

γ Tauri.

	h.	m.	s.
Right Ascension. . .	4	12	37.462
North-Polar Distance .	74°	40′	41.″94

1874.				s.		″
Jan.	15	Sk.	—	0.15	—	0.9
	17	Sk.	+	0.03	—	1.0
June	17	F.	—	0.02	—	2.4
	21	F.	+	0.03	+	0.6
Oct.	31	E.	—	0.02	—	1.5
Nov.	13	E.	—	0.07	—	0.4
Dec.	14	E.	—	0.05	+	0.5
	18	E.	+	0.10	+	1.1
	22	E.	—	0.01	+	0.7
Mean			—	0.018	—	0.37
Div., Flex., etc. .				. .	+	1.21

ε Tauri.

	h.	m.	s.
Right Ascension. . .	4	21	15.637
North-Polar Distance .	71°	6′	2″.67

1874.			s.		″
Jan.	15	Sk.	− 0.10	−	0.8
	17	Sk.	− 0.11	+	1.7
April	11	F.	− 0.05	−	1.2
June	17	F.	− 0.03	−	0.6
	21	F.	− 0.05	+	1.0
Aug.	4	E.	+ 0.09	−	0.5
	31	Sk.	+ 0.05	−	1.9
Oct.	31	E.	+ 0.06	−	1.3
Nov.	25	F.	− 0.05	+	1.2
Dec.	5	Sk.	+ 0.05	−	0.5
	7	F.	− 0.05	+	1.1
	9	Sk.	+ 0.02	+	2.1
	14	E.	− 0.04	+	0.4
	18	E.	+ 0.11	+	2.0
	19	F.	− 0.09	+	1.0
	21	Sk.	− 0.01	−	0.8
	22	E.	− 0.01	+	0.7
Mean			− 0.012	+	0.21
Div., Flex., etc. .			. .	+	1.24

α Tauri.

	h.	m.	s.
Right Ascension. . .	4	28	41.535
North-Polar Distance .	73°	44′	44″.66

1874.			s.		″
April	11	F.	− 0.05	−	0.4
	21	Sk.	+ 0.02	+	2.6
May	7	Sk.	− 0.06	+	1.2
	11	Sk.	+ 0.03	+	0.5
June	8	E.	− 0.01	+	1.9
	9	F.	. .	+	2.0
	12	E.	+ 0.03	+	1.3
	21	F.	+ 0.04		. .
	22	E.	− 0.05	−	0.1
	24	E.	− 0.12	−	2.1
	28	E.	+ 0.07	−	0.3
July	5	Sk.	− 0.12	−	0.4
	6	E.	− 0.09	−	1.2
	8	S.	− 0.09	+	0.3
Aug.	4	E.	+ 0.06	−	0.1
	31	Sk.	− 0.01	−	0.3
Oct.	31	E.	+ 0.01	+	0.1
Nov.	21	F.	− 0.03	−	0.7
	25	F.	+ 0.05	+	0.9
Dec.	5	Sk.	+ 0.01	+	0.2
	9	Sk.	+ 0.02	+	0.8
	14	E.	− 0.13	+	0.9
	18	E.	− 0.03	+	2.0
	21	Sk.	− 0.06	−	0.8
	22	E.	+ 0.01	+	1.7
Mean			− 0.021	+	0.42
Div , Flex., etc. .			. .	+	1.21

α Tauri (Ref.).

1874.			s.		″
Jan.	17	Sk.	+ 0.37	+	5.07
Div., Flex., etc. .			. .	−	0.68

9 Camelopardalis.

	h.	m.	s.
Right Ascension. . .	4	41	32.098
North-Polar Distance .	23°	52′	29″.44

1874.			s.		″
Oct.	31	E.	+ 0.14	−	0.2
Dec.	18	E.	+ 0.26	−	0.1
	22	E.	+ 0.20	+	1.1
Mean			+ 0.200	+	0.27
Div., Flex., etc. .			. .	+	0.84

9 Camelopardalis (Ref.).

1874.			s.		″
Jan.	17	Sk.	+ 0.05	+	0.5
Div., Flex., etc. .			. .	+	0.57

ι Aurigæ.

	h.	m.	s.
Right Ascension. . .	4	48	47.405
North-Polar Distance .	57°	2′	8″.02

1874.			s.		″
April	21	Sk.	− 0.07	+	2.2
Aug.	4	E.	− 0.01	+	1.3
	31	Sk.	+ 0.04		. .
Oct.	31	E.	− 0.04	+	0.5
Nov.	13	F.	+ 0.06	+	0.7
	21	F.	0.00	+	1.1
Dec.	8	S.	+ 0.03	−	0.9
	14	E.	− 0.05	−	0.1
	18	E.	+ 0.01	+	0.9
	21	Sk.	+ 0.05	−	2.0
	22	E.	+ 0.09	−	0.9
Mean			+ 0.010	+	0.28
Div., Flex., etc. .			. .	+	1.13

11 Orionis.

	h.	m.	s.
Right Ascension. . .	4	57	22.273
North-Polar Distance .	74°	46′	23″.63

1874.			s.		″
Jan.	14	S.	− 0.06	−	1.0
	16	E.	− 0.11	−	1.2
Oct.	31	E.	− 0.09	−	1.2
Nov.	21	F.	− 0.12	−	1.9
Mean			− 0.095	−	1.32
Div., Flex., etc. .			. .	+	1.21

α Aurigæ.

	h.	m.	s.
Right Ascension. . .	5	7	23.020
North-Polar Distance .	44°	7′	58″.38

1874.			s.		″
Jan.	16	E.	− 0.08	−	0.9
June	18	S.	− 0.08	+	1.4
	28	E.	− 0.06	−	2.1
July	5	Sk.	− 0.13	−	0.6
	12	S.	− 0.08		. .
	14	E.	− 0.07	−	0.8
Mean			− 0.083	−	0.60
Div., Flex., etc. .			. .	+	0.32

β Orionis.

	h.	m.	s.
Right Ascension. . .	5	8	28.979
North-Polar Distance .	98°	20′	55″.99

1874.			s.		″
Jan.	14	S.	− 0.09	−	0.9
	16	E.	− 0.07	−	1.1
April	27	F.	+ 0.08	−	1.2
May	7	Sk.	+ 0.02	−	1.0
	11	Sk.	− 0.07	−	0.5
	19	Sk.	− 0.13	−	0.2
	27	Sk.	+ 0.01	−	0.3
June	21	F.	. .	−	2.3
	22	E.	0.00	−	1.1
	24	E.	− 0.02	−	3.0
	28	E.	+ 0.14	−	2.9

β Orionis—Continued.

1874.			s.		″
July	5	E.	+ 0.15	−	1.6
	6	E.	− 0.01	−	2.2
	8	S.	− 0.04	−	1.8
	9	Sk.	− 0.05		. .
	12	S.	− 0.08	−	0.4
	14	E.	− 0.03	−	3.0
	22	E.	− 0.09	−	2.5
Oct.	31	E.	− 0.03	−	0.6
Dec.	8	S.	+ 0.03	−	1.0
Mean			− 0.015	−	1.45
Div., Flex., etc. .			. .	+	1.23

β Tauri.

	h.	m.	s.
Right Ascension. . .	5	18	19.664
North-Polar Distance .	61°	30′	4″.70

1874.			s.		″
Jan.	14	S.	− 0.03	−	1.9
	16	E.	+ 0.03	−	0.8
	27	Ha.	− 0.07		. .
May	7	Sk.	− 0.01	+	0.6
	11	Sk.	− 0.04	−	0.9
	19	Sk.	+ 0.07	+	0.4
	27	Sk.	− 0.04	−	0.8
June	24	E.	+ 0.03	−	1.8
	28	E.	0.00	−	0.5
July	6	E.	− 0.06	−	1.2
	9	Sk.	− 0.10	+	1.1
	12	S.	− 0.06	−	0.8
	14	E.	− 0.06	+	0.6
	22	E.	− 0.17	−	2.4
Dec.	8	S.	− 0.06	−	1.6
Mean			− 0.038	−	0.71
Div., Flex., etc. .			. .	+	1.16

Groombridge 966.

	h.	m.	s.
Right Ascension. . .	5	22	53.632
North-Polar Distance .	15°	2′	41″.64

1874.			s.		″
Jan.	14	S.	− 0.43	−	3.2
Div., Flex., etc. .			. .	+	0.58

δ Orionis.

	h.	m.	s.
Right Ascension. . .	5	25	34.230
North-Polar Distance .	90°	23′	39″.64

1874.			s.		″
Jan.	29	F.	− 0.12	−	0.3
Feb.	16	Sk.	− 0.04	+	0.4
	27	Ha.	+ 0.02		. .
July	6	E.	− 0.05	−	1.7
	9	Sk.	− 0.02	+	0.5
	14	E.	− 0.02	−	0.4
	22	E.	− 0.16	−	2.0
Dec.	22	E.	− 0.02	−	0.7
Mean			− 0.051	−	0.60
Div., Flex., etc. .			. .	+	1.36

α Leporis.

	h.	m.	s.
Right Ascension. . .	5	27	10.467
North-Polar Distance .	107°	54′	50″.04

1874.			s.		″
Feb.	27	Ha.	− 0.02		. .
Dec.	22	E.	− 0.14	−	0.8
Mean			− 0.080		. .
Div., Flex., etc. .			. .	+	1.32

ε Orionis.

Right Ascension . . 5 29 49.222

North-Polar Distance . 91° 17′ 3.″11

1874.			s.		″
Jan.	14	S.	− 0.01	−	0.3
	29	F.	− 0.10	+	0.8
Feb.	10	E.	− 0.05	−	0.4
	12	F.	+ 0.04	−	1.4
	27	Ha.	− 0.04		. .
June	1	E.	− 0.13	+	1.0
July	6	E.	− 0.06	−	2.3
	12	S.	− 0.01	−	1.2
	14	E.	− 0.01	−	3.7
	22	E.	− 0.06	−	2.3
	24	S.	. .	−	1.6
Dec.	22	E.	− 0.08	−	0.5
Mean			− 0.046	−	1.08
Div., Flex., etc. .			. .	+	1.36

α Columbæ.

Right Ascension. : . 5 35 5.268

North-Polar Distance . 124° 8′ 32.″35

1874.			s.		″
Jan.	11	Ha.	− 0.12		. .
	14	S.	− 0.01	+	1.9
	29	F.	− 0.19	+	1.8
Feb.	12	F.	− 0.15	+	0.7
	16	Sk.	− 0.23	+	1.9
Dec.	22	E.	− 0.01	+	0.4
Mean			− 0.118	+	1.34
Div., Flex., etc. .			. .	+	1.52

α Orionis.

Right Ascension. . . 5 48 21.056

North-Polar Distance . 82° 37′ 6.″09

1874.			s.		″
Jan.	10	Ha.	− 0.01		. .
	11	Ha.	− 0.03		. .
	28	E.	0.00		0.0
	29	F.	− 0.10	+	0.1
Feb.	10	E.	+ 0.14	−	0.7
	12	F.	+ 0.05	−	0.6
	16	Sk.	− 0.01	+	1.0
	17	E.	+ 0.17	−	1.2
	27	Ha.	− 0.01		. .
May	28	E.	+ 0.03	+	1.6
June	1	E.	− 0.23	−	0.4
July	6	E.	+ 0.01	−	1.8
	12	S.	− 0.03		. .
	14	E.	− 0.01	+	1.1
	22	E.	− 0.07	−	2.4
	24	S.	. .	−	1.7
	29	E.	− 0.12	−	2.1
	30	F.	− 0.03	−	0.7
Sept.	14	E.	− 0.03	−	0.7
	18	E.	− 0.04	−	1.3
	22	E.	− 0.11	−	0.2
Mean			− 0.022	−	0.59
Div., Flex., etc. .			. .	+	1.37

22 Camelopardalis.

Right Ascension. . . 6 4 57.314

North-Polar Distance . 20° 38′ 23.″87

1874.			s.		″
Jan.	10	Ha.	+ 0.18		. .
	14	S.	+ 0.26	−	2.2
	28	E.	+ 0.24	−	1.0

22 Camelopardalis—Continued.

1874.			s.		″
Sept.	30	F.	+ 0.24	+	1.5
Dec.	14	E.	+ 0.39	+	3.8
Mean			+ 0.262	+	0.42
Div., Flex., etc. .			. .	+	0.69

22 Camelopardalis, S. P.

Right Ascension. . . 6 4 57.314

North-Polar Distance . 339° 21′ 36.″13

1874.			s.		″
June	18	F.	+ 0.21	−	2.5
Div., Flex., etc. .			. .	+	0.84

μ Geminorum.

Right Ascension. . . 6 15 20.293

North-Polar Distance . 67° 25′ 25.″75

1874.			s.		″
Jan.	10	Ha.	+ 0.07		. .
	11	Ha.	− 0.06		. .
	16	E.	− 0.10	−	1.2
	24	E.	− 0.07	−	1.2
	28	E.	− 0.07	−	2.0
Feb.	10	E	+ 0.07	−	2.1
	17	E.	− 0.03	−	0.8
	26	Ha.	− 0.10		. .
	27	Ha.	0.00		. .
Mar.	2	Ha.	− 0.01		. .
	14	E.	− 0.08	−	1.4
June	1	E.	− 0.11	−	0.9
July	22	E.	− 0.16	−	3.3
	29	E.	− 0.20	−	4.7
Sept.	30	F	− 0.04	+	0.4
Dec.	14	E.	− 0.04	−	0.4
	18	E.	− 0.03	+	1.3
Mean			− 0.056	−	1.36
Div., Flex., etc. .			. .	+	1.24

γ Geminorum.

Right Ascension. . . 6 30 25.992

North-Polar Distance . 73° 29′ 42.″25

1874.			s.		″
Jan.	9	Ha.	− 0.06		. .
	10	Ha.	+ 0.04		. .
	11	Ha.	− 0.03		. .
	16	E.	+ 0.04	−	0.1
Feb.	11	S.	+ 0.01	+	0.5
	16	Sk.	− 0.05	+	1.6
	17	E.	+ 0.06	−	0.8
	27	Ha.	− 0.07		. .
Mar.	2	F.	− 0.02		. .
	14	E.	− 0.01	−	0.3
May	28	E.	− 0.04	+	0.1
June	1	E.	− 0.15		0.0
	2	F.	− 0.04		. .
	9	E.	− 0.05	+	0.9
	13	E.	− 0.07	+	0.4
July	22	E.	. .	+	0.5
	29	E.	− 0.15	−	1.2
Aug.	5	S.	− 0.10	−	1.1
Sept.	30	F.	− 0.14	+	1.3
Oct.	28	F.	− 0.04	−	0.7
Dec.	14	E.	− 0.04	−	1.0
	15	F.	− 0.07	+	2.3
	18	E.	− 0.02	+	2.8
Mean			− 0.045	+	0.31
Div., Flex., etc. .			. .	+	1.21

γ Geminorum (Ref.).

1874.			s.		″
Feb.	10	E.	+ 0.01	+	2.7
Div., Flex., etc. .			. .	−	0.69

α Canis Majoris.

Right Ascension. . . 6 39 35.709

North-Polar Distance . 106° 32′ 40.″97

1874.			s.		″
Jan.	9	Ha.	− 0.09		. .
	10	Ha.	+ 0.03		. .
	11	Ha.	− 0.03		. .
Feb.	26	Ha.	− 0.10		. .
Mar.	2	Ha.	+ 0.01		. .
May	28	E.	+ 0.09	−	1.5
June	1	E.	− 0.14	−	0.2
	2	F.	− 0.11	+	0.1
	9	E.	− 0.21	−	0.1
	13	E.	− 0.17	−	1.7
July	16	S.	− 0.03		. .
	22	E.	+ 0.04	−	2.8
	29	E.	+ 0.04	−	1.6
Aug.	5	S.	− 0.04	−	1.4
Sept.	30	F.	− 0.06		. .
Dec.	18	E.	+ 0.01	+	0.6
Mean			− 0.048	−	0.96
Div., Flex., etc. .			. .	+	1.31

51 Cephei.

Right Ascension. . . 6 40 44.183

North-Polar Distance . 2° 45′ 51.″96

1874.			s.		″
Jan.	14	S.	+ 0.15δ		. .
	28	E.	0.00δ	−	1.5
	29	F.	. .	−	1.1
	31	Sk.	. .	−	1.7
Feb.	10	E.	− 0.02δ	−	1.8
	11	S.	+ 0.17δ	−	0.8
	16	Sk.	− 0.11δ	−	0.1
	17	E.	− 0.46δ	−	0.7
	18	F.	+ 0.51δ	−	1.7
Mar.	14	E.	− 0.60δ	−	1.8
	24	Sk.	+ 2.24λ	−	0.6
Sept.	30	F.	+ 0.12δ	+	1.4
Oct.	1	S.	+ 0.87α, δ	−	1.1
	2	Sk.	− 0.50α, λ		0.0
	28	F.	− 0.79λ	−	1.1
Dec.	14	E.	− 0.23δ	−	1.0
	15	F.	− 0.47α, δ		0.0
Mean			. .	−	0.85
Div., Flex., etc. .			. .	+	0.79

51 Cephei, S. P.

Right Ascension. . . 6 40 44.183

North-Polar Distance . 357° 14′ 8.″04

1874.			s.		″
Mar.	10	S.	+ 0.09δ		. .
June	17	E.	+ 0.37δ	−	0.8
	18	F.	+ 0.29δ	−	3.1
	28	F.	− 0.39λ		. .
	29	E.	+ 0.04δ, λ	−	1.0
July	5	E.	− 0.52δ	−	0.3
	6	Sk.	. .	+	0.8
	7	E.	+ 0.24δ	−	0.7
	8	Sk.	− 2.19α, δ	−	1.5
	15	E.	+ 1.35δ	−	0.6
	17	S.	− 0.40δ	−	0.2
	23	E.	− 0.63δ	−	0.4
	30	E.	− 2.76δ	−	0.5

51 Cephei, S. P.—Continued.

1874.				s.		″
Aug.	4	E.	—	0.50δ	—	1.1
	15	Sk.	+	0.35α, δ		. .
	27	Sk.		. .	+	2.3
Sept.	23	S.	+	0.82α		. .
Oct.	3	E.	+	0.57	—	0.3
Mean				. .	—	0.53
Div., Flex., etc. .				. .	+	0.87

ε Canis Majoris.

	h.	m.	s.
Right Ascension. . .	6	53	40.519
North-Polar Distance .	118°	48′	6″.99

1874.				s.		″
Jan.	10	Ha.	—	0.13		. .
	24	E.	—	0.07	—	2.0
	29	F.		. .	+	1.2
Feb.	16	Sk.	—	0.15	+	1.1
	18	F.	—	0.24	—	0.6
	21	Ha.	—	0.10		. .
	26	Ha.	—	0.09		. .
Mar.	11	E.	+	0.06	+	0.6
	14	E.	—	0.04	—	1.7
	24	Sk.	—	0.15		0.0
June	2	F.	—	0.27	—	3.4
	13	E.	—	0.14	—	1.3
July	29	E.	+	0.09	—	4.1
Aug.	5	S.	+	0.05		. .
	14	Sk.		0.00	—	1.4
Sept.	30	F.	—	0.05	—	0.5
Oct.	1	S.	—	0.10	+	0.1
	2	Sk.	+	0.11	—	1.0
	28	F.	—	0.03	—	0.9
Dec.	14	E.	—	0.01	—	1.7
	15	F.	—	0.17	+	0.8
Mean			—	0.072	—	0.87
Div., Flex., etc. .				. .	+	1.59

δ Canis Majoris.

	h.	m.	s.
Right Ascension. . .	7	3	16.153
North-Polar Distance .	116°	11′	38″.80

1874.				s.		″
Jan.	10	Ha.	—	0.13		. .
Feb.	18	F.	—	0.07	+	0.6
	21	Ha.	+	0.06		. .
	26	Ha.	—	0.03		. .
Mar.	11	E.	—	0.07	+	1.0
	13	E.	—	0.08		0.0
	14	E.	+	0.01	+	0.1
	24	Sk.	—	0.03	+	1.4
	25	E.	+	0.04	+	0.6
June	2	F.	—	0.01	—	1.6
	13	E.	—	0.07	—	0.2
July	29	E.	—	0.08	—	1.4
Aug.	5	S.	—	0.04		. .
	14	Sk.		0.00	—	2.7
Sept.	30	F.	—	0.02	+	2.2
Oct.	1	S.	—	0.01	+	0.7
	2	Sk.	+	0.05	—	0.5
	28	F.	—	0.01	+	1.2
Dec.	14	E.	—	0.02	+	0.1
	15	F.	—	0.09	—	3.7
	23	F.	—	0.10	+	4.1
Mean			—	0.031	+	0.11
Div., Flex., etc. .				. .	+	1.57

δ Geminorum.

	h.	m.	s.
Right Ascension. . .	7	12	35.844
North-Polar Distance .	67°	47′	15″.20

1874.				s.		″
Jan.	9	Ha.	—	0.12		. .
	10	Ha.	—	0.18		. .
	11	Ha.		0.00		. .
	28	E.	—	0.05	—	1.1
	31	Sk.	—	0.15	+	0.4
Feb.	21	Ha.	—	0.03		. .
	26	Ha.	—	0.05		. .
Mar.	2	Ha.	—	0.07		. .
	11	E.	—	0.05	—	0.8
	13	E.	—	0.09		. .
	14	E.	—	0.09	—	0.7
	24	Sk.	—	0.03	+	1.4
	25	E.	—	0.06	+	0.8
June	13	E.	—	0.08	+	1.0
	18	F.	—	0.06	—	0.2
July	29	E.	+	0.04	—	1.6
Sept.	30	F.	—	0.10	+	0.5
Oct.	1	S.	—	0.09	—	0.7
	2	Sk.	—	0.03	—	0.7
	28	F.	+	0.03	—	0.1
Dec.	14	E.	—	0.03	+	0.9
Mean			—	0.061	—	0.06
Div., Flex., etc. .				. .	+	1.25

a^2 Geminorum.

	h.	m.	s.
Right Ascension. . .	7	26	33.207
North-Polar Distance .	57°	50′	14″.65

1874.				s.		″
Jan.	9	Ha.	+	0.22		. .
	16	E.	+	0.22	—	0.4
	24	E.	+	0.05	—	2.4
	28	E.	+	0.22	—	2.2
	31	Sk.	+	0.32	—	1.7
Feb.	10	E.	+	0.19		0.0
	16	Sk.	+	0.39	—	0.2
	17	E.	+	0.25	—	3.0
	18	F.	+	0.31	—	1.0
	21	Ha.	+	0.18		. .
	26	Ha.	+	0.34		. .
Mar.	1	E.	+	0.48	+	0.1
	2	Ha.	+	0.22		. .
	9	E.	+	0.11	—	0.1
	11	E.	+	0.17	—	1.7
	12	E.	+	0.19	—	1.7
	13	E.	+	0.24		0.0
	14	E.		. .	+	0.1
	25	E.	+	0.22	+	0.5
May	28	E.	+	0.31	—	1.8
June	1	E.	+	0.25	—	1.5
	9	E.	+	0.22	—	0.2
	13	E.	+	0.19	—	0.2
	15	S.	+	0.28	+	1.1
	18	F.	+	0.16	—	1.3
	19	S.	+	0.29	—	1.9
	22	F.		. .	—	1.1
	25	E.	+	0.24	—	2.9
	29	E.	+	0.25	—	1.1
July	29	E.	+	0.14	—	2.2
Aug.	5	S.	+	0.24	—	1.2
	14	Sk.	+	0.29	—	1.1
	18	Sk.	+	0.29		0.0
Sept.	30	F.	+	0.26	+	1.0
Oct.	1	S.	+	0.44	—	0.4
	2	Sk.	+	0.30	—	0.5
	28	F.	+	0.33	+	0.5
Dec.	11	F.	+	0.34	—	1.3
	15	F.	+	0.32	—	0.5
	23	F.	+	0.25	—	0.3
Mean			+	0.256	—	0.85
Div., Flex , etc. .				. .	+	1.14

α Canis Minoris.

	h.	m.	s.
Right Ascension. . .	7	32	42.413
North-Polar Distance .	84°	27′	14″.14

1874.				s.		″
Jan.	9	Ha.	—	0.14		. .
	28	E.	—	0.18	—	2.7
	31	Sk.	—	0.19	—	1.8
Feb.	4	F.	—	0.10	+	0.5
	17	E.	—	0.11	—	2.6
	18	F.	—	0.11	—	2.6
	21	Ha.	—	0.19		. .
	26	Ha.	—	0.19		. .
Mar.	1	E.	—	0.22	—	0.8
	2	Ha.	—	0.25		. .
	9	E.	—	0.16	—	1.3
	11	E.	—	0.22	—	0.7
	12	E.	—	0.10	—	1.6
	13	E.	—	0.07	—	1.3
	14	E.	—	0.12	—	0.8
	21	E.	—	0.12	—	0.5
	25	E.	—	0.14	—	0.3
May	28	E.	—	0.07	—	1.2
June	1	E.	—	0.17	—	1.5
	2	F.	—	0.19	—	0.8
	9	E.	—	0.24	—	0.5
	13	E.	—	0.22	—	1.1
	18	F.	—	0.20	—	4.0
	19	S.	—	0.12	—	1.9
	25	E.	—	0.15	—	2.5
	29	E.	—	0.17	—	2.6
July	29	E.	—	0.18	—	2.4
Aug.	5	S.	—	0.14	—	1.5
	14	Sk.	—	0.08	—	3.4
	18	Sk.	—	0.08	—	1.5
	25	S.		. .	—	2.8
Sept.	30	F.	—	0.14	—	0.7
Oct.	28	F.	—	0.09	+	0.1
Dec.	11	F.	—	0.11	—	2.7
	23	F.	—	0.23	—	3 5
Mean			—	0.153	—	1.65
Div , Flex., etc. .				. .	+	1.44

α Canis Minoris (Ref.).

1874.				s.		″
Feb.	10	E.	—	0.08	+	1.0
Oct.	1	S.		. .	+	0.5
Mean				. .	+	0.75
Div., Flex., etc. .				. .	—	0.51

β Geminorum.

	h.	m.	s.
Right Ascension. . .	7	37	36.231
North-Polar Distance .	61°	40′	16″.67

1874.				s.		″
Jan.	9	Ha.	+	0.07		. .
	28	E.	—	0.02	—	1.3
Feb.	21	Ha.	—	0.07		. .
	27	S.		0.00	—	1.3
Mar.	2	Ha.	—	0.12		. .
	11	E.	—	0.11	—	0.5
	12	E.	+	0.01	—	1.6
	13	E.	—	0.04	—	0.4
	14	E.	—	0.04	+	0.2
	21	E.	—	0.09	—	0.6
	25	E.	—	0.05	+	0.5
	29	E.	—	0.08	—	0.2
May	19	Sk.	+	0.04	+	0.9
	28	E.		0.00	—	0.4
June	1	E.	—	0.01	—	0.9
	2	F.	—	0.05	+	1.0
	13	E.	+	0.02	—	1.2
	15	S.	—	0.08		. .
	19	S.	—	0.07	—	0.6
	22	F.	—	0.07	+	0.4
	25	E.	—	0.14	—	0.9

β Geminorum—Continued.

1874.			s.		″
June	29	E.	— 0.03	—	0.5
July	29	E.	— 0.11	—	0.9
Aug.	5	S.	— 0.12	—	1.6
	18	Sk.	+ 0.02	—	0.9
	25	S.	. .	—	0.3
Sept.	30	F.	0.00	+	1.9
Oct.	28	F.	— 0.11	—	0.4
Dec.	11	F.	. .	—	1.6
	15	F.	— 0.07	+	1.6
	23	F.	— 0.09	—	1.7
Mean			— 0.049	—	0.42
Div., Flex., etc. .			. .	+	1.16

β Geminorum (Ref.).

1874.			s.		″
Feb.	10	E.	+ 0.09	+	1.5
Div., Flex., etc. .			. .	—	0.31

φ Geminorum.

	h.	m.	s.
Right Ascension. . .	7	45	47.092
North-Polar Distance .	62°	54′	35″.98

1874.			s.		″
Jan.	16	E.	— 0.06	—	0.6
	24	E.	— 0.20	+	1.1
Feb.	10	E.	0.00	—	1.8
	21	Ha.	+ 0.06	—	1.8
	26	F.	— 0.08		. .
Mar.	1	E.	— 0.18	+	0.1
	9	E.	— 0.14	—	0.8
	11	E.	— 0.09	—	1.4
	12	E.	— 0.07	—	0.3
	13	E.	— 0.06		. .
	14	Sk.	— 0.16	—	1.3
	19	E.	— 0.06	—	0.5
	21	E.	— 0.13	—	0.6
	25	E.	— 0.09	—	0.7
	29	E.	— 0.13	—	0.7
Oct.	28	F.	— 0.14	—	0.4
Dec.	11	F.	— 0.07	—	2.2
	15	F.	— 0.07	+	1.3
Mean			— 0.093	—	0.66
Div., Flex., etc. .			. .	+	1.17

3 Ursæ Majoris.

	h.	m.	s.
Right Ascension. . .	8	0	14.906
North-Polar Distance .	21°	9′	30″.30

1874.			s.		″
Mar.	24	Sk.	— 0.37	—	0.4
Div., Flex., etc. .			. .	+	0.73

3 Ursæ Majoris, S. P.

	h.	m.	s.
Right Ascension. . .	8	0	14.906
North-Polar Distance .	338°	50′	29″.70

1874.			s.		″
Oct.	16	F.	. .	+	1.6
Div., Flex., etc. .			. .	+	0.84

15 Argus.

	h.	m.	s.
Right Ascension. . .	8	2	10.769
North-Polar Distance .	113°	56′	31″.70

1874.			s.		″
Mar.	2	F.	— 0.15	+	1.1
	10	F.	— 0.02	+	0.8

15 Argus—Continued.

1874.			s.		″
Mar.	13	E.	— 0.07	+	0.2
	19	E.	0.00	—	0.2
	28	Sk.	— 0.13	—	1.7
April	13	Sk.	+ 0.10	—	0.7
Dec.	11	F.	— 0.21	—	1.9
Mean			— 0.069	—	0.34
Div., Flex., etc. .			. .	+	1.63

ε Hydræ.

	h.	m.	s.
Right Ascension. . .	8	40	6.199
North-Polar Distance .	83°	7′	12″.32

1874.			s.		″
Feb.	4	F.	— 0.13	+	1.1
Mar.	12	E.	— 0.10	—	0.2
	19	E.	+ 0.02	—	0.8
	21	E.	— 0.07	+	0.6
	25	E.	— 0.05	+	1.7
	29	E.	— 0.17	+	0.4
April	13	Sk.	— 0.03	—	1.3
	22	E.	— 0.07	+	0.5
June	25	E.	+ 0.15	—	1.1
	29	E.	— 0.09	+	1.4
July	7	E.	— 0.08	+	0.8
Dec.	24	S.	— 0.02	+	0.7
Mean			— 0.053	+	0.32
Div., Flex., etc. .			. .	+	1.40

ι Ursæ Majoris.

	h.	m.	s.
Right Ascension. . .	8	50	31.289
North-Polar Distance .	41°	27′	55″.82

1874.			s.		″
Mar.	20	Sk.	— 0.09	—	0.3
	24	Sk.	+ 0.10	—	0.3
June	22	F.	+ 0.18	—	1.8
Dec.	24	S.	+ 0.05	—	2.2
Mean			+ 0.060	—	1.15
Div., Flex., etc. .			. .	+	0.32

ι Ursæ Majoris (Ref.).

1874.			s.		″
Mar.	2	F.	— 0.11	—	3.5
	25	E.	— 0.17	—	2.1
	26	F.	— 0.14	—	2.5
	28	Sk.	. .	—	2.8
Mean			— 0.140	—	2.72
Div., Flex., etc. .			. .	+	0.66

σ³ Ursæ Majoris.

	h.	m.	s.
Right Ascension. . .	8	59	16.676
North-Polar Distance .	22°	21′	24″.39

1874.			s.		″
Mar.	24	Sk.	— 0.06	—	1.6
Dec.	11	F.	+ 0.24	—	2.3
	15	F.	— 0.03	—	2.4
	24	S.	0.00	—	3.5
Mean			+ 0.038	—	2.45
Div., Flex., etc. .			. .	+	0.81

σ² Ursæ Majoris, S. P.

	h.	m.	s.
Right Ascension. . .	8	59	16.676
North-Polar Distance .	337°	38′	35″.61

1874.			s.		″
Sept.	18	F.	— 0.23		. .
	22	F.	— 0.08	+	1.2
	25	E.	— 0.45	+	0.7
	26	F.	— 0.09	+	1.2
Oct.	29	S.	— 0.55	+	1.4
Nov.	4	E.	— 0.18		. .
	12	E.	— 0.74	+	2.6
Mean			— 0.331	+	1.42
Div., Flex., etc. .			. .	+	0.82

κ Cancri.

	h.	m.	s.
Right Ascension. . .	9	0	55.256
North-Polar Distance .	78°	49′	32″.99

1874.			s.		″
Feb.	16	Sk.	+ 0.09	—	0.9
	17	E.	— 0.01	—	2.1
	18	F.	+ 0.03	—	0.8
	28	Sk.	+ 0.02		0.0
Mar.	9	E.	+ 0.09	—	1.4
	10	F.	+ 0.01	+	0.4
	11	S.	— 0.03	—	0.8
	19	E.	+ 0.09	—	0.7
	20	Sk.	+ 0.01	—	1.6
	21	E.	— 0.01	—	0.9
	25	E.	+ 0.02	+	1.1
	26	F.	— 0.01	+	0.6
	28	Sk.	— 0.05		0.0
	29	E.	— 0.02	—	1.4
	30	F.	— 0.02	+	0.1
April	21	Sk.	+ 0.07	+	0.5
	22	E.	— 0.02	+	0.3
Mean			+ 0.015	—	0.45
Div., Flex., etc. .			. .	+	1.26

1 Draconis.

	h.	m.	s.
Right Ascension. . .	9	18	56.844
North-Polar Distance .	8°	7′	10″.81

1874.			s.		″
Mar.	20	Sk.	— 0.59	+	0.2
	24	Sk.	— 0.18	+	1.1
	28	Sk.	— 0.85	—	0.6
	30	F.	— 0.67	+	0.8
April	22	E.	— 0.25	+	1.1
Oct.	4	S.	+ 0.96	—	0.2
Mean			— 0.163	—	0.40
Div., Flex., etc. .			. .	+	0.60

1 Draconis, S. P.

	h.	m.	s.
Right Ascension. . .	9	18	56.844
North-Polar Distance .	351°	52′	49″.19

1874.			s.		″
Sept.	26	F.	— 1.78		. .
Oct.	15	E.	— 0.68	—	2.4
	20	F.	— 0.41	—	4.4
	29	S.	— 0.39	—	2.7
Nov.	12	E.	— 1.42	—	3.7
Mean			— 0.936	—	3.30
Div., Flex., etc. .			. .	+	0.83

α Hydræ.

	h.	m.	s.
Right Ascension. . .	9	21	23.753
North-Polar Distance .	98°	6′	48″.08

1874.			s.		″
Feb.	16	Sk.	+ 0.04	—	1.3
	17	E.	— 0.03	—	2.4
	27	S.	— 0.01	—	0.3
Mar.	4	Sk.	+ 0.06	—	0.6
	19	S.	— 0.04	—	0.7
	20	Sk.	+ 0.03	—	0.2
	21	E.	+ 0.08	+	0.6
	26	F.	+ 0.08	+	3.7
	29	E.	— 0.05		0.0
April	21	Sk.	0.00	+	0.3
	22	E.	— 0.03	+	0.5
	29	E.	— 0.03	—	1.4
July	6	Sk.	— 0.04	—	0.9
	7	E.	+ 0.08	—	0.3
	15	E.	— 0.09	—	0.6
Oct.	4	S.	— 0.09	—	3.4
	8	S.	— 0.05	—	2.4
Dec.	24	S.	0.00	+	0.3
	25	Sk.	+ 0.02	—	0.5
Mean			— 0.004	—	0.51
Div., Flex., etc. .			. .	+	1.24

d Ursæ Majoris.

	h.	m.	s.
Right Ascension. . .	9	23	18.109
North-Polar Distance .	19°	37′	4″.94

1874.			s.		″
Dec.	24	S.	— 0.23	.	. .

d Ursæ Majoris, S. P.

	h.	m.	s.
Right Ascension. . .	9	23	18.109
North-Polar Distance .	340°	22′	55″.06

1874.			s.		″
Sept.	26	F.	+ 0.07		. .
Oct.	15	E.	— 0.14	+	0.1
Mean			— 0.035		. .
Div., Flex., etc. .			. .	+	0.82

θ Ursæ Majoris.

	h.	m.	s.
Right Ascension. . .	9	24	25.041
North-Polar Distance .	37°	44′	59″.55

1874.			s.		″
July	10	Sk.	+ 0.14	+	0.1
Div., Flex., etc. .			. .	+	0.45

ε Leonis.

	h.	m.	s.
Right Ascension. . .	9	38	41.801
North-Polar Distance .	65°	38′	47″.47

1874.			s.		″
Jan.	31	Sk.	— 0.07	—	0.8
Feb.	4	F.	— 0.08	+	0.9
Mar.	4	Sk.	— 0.14	—	0.4

ε Leonis—Continued.

1874.			s.		″
Mar.	19	E.	— 0.16	—	0.1
	26	F.	— 0.02	—	0.2
	30	F.	— 0.02	+	1.0
April	26	E.	— 0.03	—	0.6
	27	E.	— 0.14	—	0.6
	29	E.	— 0.18	—	0.7
July	7	E.	— 0.08	—	1.2
	30	E.	— 0.08	—	1.0
Sept.	18	F.	+ 0.01	—	0.4
	20	E.	— 0.06	—	0.9
	23	Sk.	— 0.06	—	1.2
	24	E.	— 0.18	—	1.3
	25	F.	— 0.08	—	1.9
	30	S.	— 0.11	—	2.9
Oct.	2	E.	— 0.04	—	2.9
	4	S.	— 0.08	—	0.5
Mean			— 0.084	—	0.95
Div., Flex., etc. .			. .	+	1.20

ε Leonis (Ref.).

1874.			s.		″
Dec.	24	S.	. .	+	0.1
Div., Flex., etc. .			. .	—	0.45

μ Leonis.

	h.	m.	s.
Right Ascension. . .	9	45	35.623
North-Polar Distance .	63°	24′	2″.10

1874.			s.		″
Jan.	31	Sk.	+ 0.02	—	1.1
Feb.	28	Sk.	— 0.03	—	1.2
Mar.	4	Sk.	— 0.06	—	0.7
	19	F.	0.00	—	1.0
	20	Sk.	— 0.05	—	0.5
	28	Sk.	— 0.04	—	0.7
April	27	E.	— 0.01	—	1.2
	29	E.	— 0.06	—	0.2
May	3	E.	— 0.02	+	0.4
June	18	F.	— 0.04	—	1.3
Sept.	25	F.	+ 0.05	—	2.0
Mean			— 0.022	—	0.86
Div., Flex., etc. .			. .	+	1.17

α Leonis.

	h.	m.	s.
Right Ascension. . .	10	1	39.647
North-Polar Distance .	77°	25′	3″.18

1874.			s.		″
Feb.	11	S.	— 0.07	—	0.5
	27	S.	+ 0.05	—	1.3
	28	Sk.	— 0.04	+	1.1
Mar.	1	E.	— 0.11	—	0.6
	2	F.	— 0.04	+	1.3
	9	E.	— 0.02	—	0.1
	10	F.	— 0.03		. .
	19	E.	— 0.09	—	1.3
	20	Sk.	— 0.09	+	0.2
	21	E.	— 0.07	—	1.4
	25	E.	— 0.03	+	3.4
	30	F.	. .	+	0.3
April	3	F.	— 0.04	+	0.2
	4	S.	— 0.04	—	1.2
	20	S.	. .	—	0.3
	22	E.	— 0.10	+	0.4
	26	E.	— 0.13	—	0.8
	27	E.	+ 0.01	—	0.9
	29	Sk.	— 0.02	—	1.3

α Leonis—Continued.

1874.			s.		″
May	3	E.	— 0.07	—	1.3
	7	Sk.	— 0.04	+	0.4
June	18	F.	— 0.10	—	1.4
July	9	S.	+ 0.06		. .
	10	Sk.	+ 0.01	—	0.6
	15	E.	— 0.06	+	0.8
	17	S.	— 0.09		. .
	23	E.	+ 0.02	—	3.7
	30	E.	— 0.05	+	1.8
Sept.	17	F.	— 0.13	—	2.6
	20	E.	— 0.01	—	0.5
Sept.	21	F.	. .	—	2.1
	22	S.	. .	—	0.7
	23	Sk.	— 0.05	—	1.1
	24	E.	— 0.05	—	0.2
	25	F.	— 0.11	—	1.5
Oct.	2	E.	— 0.07	—	3.4
	4	S.	— 0.12	—	2.1
Dec.	9	S.	. .	—	1.6
	24	S.	— 0.10	+	0.3
Mean			— 0.054	—	0.62
Div., Flex., etc. .			. .	+	1.23

α Leonis (Ref.).

1874.			s.		″
Mar.	4	Sk.	— 0.14	+	2.5
	26	F.	. .	+	0.6
Sept.	30	S.	. .	+	3.9
Mean			. .	+	2.33
Div., Flex., etc. .			. .	—	0.76

32 Ursæ Majoris.

	h.	m.	s.
Right Ascension. . .	10	8	51.578
North-Polar Distance .	24°	15′	52″.23

1874.			s.		″
Feb.	27	S.	— 0.33	—	3.4
April	20	S.	. .	—	0.8
Mean			. .	—	2.10
Div., Flex., etc. .			. .	+	0.84

32 Ursæ Majoris, S. P.

	h.	m.	s.
Right Ascension. . .	10	8	51.578
North-Polar Distance .	335°	44′	7″.77

1874.			s.		″
Oct.	17	S.	— 0.18	+	0.3
Div., Flex., etc. .			. .	+	0.78

γ¹ Leonis.

	h.	m.	s.
Right Ascension. . .	10	13	1.394
North Polar Distance .	69°	31′	17″.88

1874.			s.		″
Feb.	4	F.	+ 0.04	—	0.6
	18	F.	+ 0.04	—	0.2
	28	Sk.	— 0.05	+	1.1
Mar.	1	E.	— 0.03		0.0
	2	F.	+ 0.11		. .
	7	S.	— 0.11		. .
	9	E.	+ 0.01	+	0.3
	19	E.	— 0.09	—	1.0
	26	F.	. .		0.0

γ^1 Leonis—Continued.

1874.			s.		″
April	13	Sk.	— 0.03	—	2.5
	22	E.	— 0.06	+	0.4
	26	E.	— 0.04	+	0.6
	27	E.	— 0.10	—	0.5
	29	Ha.	— 0.10	+	0.3
May	3	E.	0.00	+	1.4
June	18	F.	— 0.09	—	0.1
July	10	Sk.	+ 0.04	—	0.1
	15	E.	. .	+	2.6
	23	E.	— 0.08	—	0.1
	30	E.	— 0.01	+	1.4
Sept.	17	F.	— 0.06	—	0.2
	20	E.	+ 0.01	+	0.2
	21	F.	— 0.16	—	0.5
	22	S.	+ 0.01	+	0.4
	23	Sk.	0.00	+	0.9
	24	E.	— 0.02	+	0.6
	25	F.	— 0.02	—	0.1
	30	S.	— 0.02	—	1.4
Oct.	2	E.	— 0.04	—	2.3
	4	S.	— 0.01		. .
Dec.	15	F.	— 0.20	+	0.1
	25	Sk.	0.00	+	0.1
Mean			— 0.035	+	0.03
Div., Flex., etc.			. .	+	1.27

9 Draconis.

	h.	m.	s.
Right Ascension. . .	10	24	19.729
North-Polar Distance .	13°	38′	21″.63

1871.			s.		″
April	27	E.	+ 0.44	—	3.2
	29	E.	— 0.62	—	1.0
May	3	E.	— 0.01	—	2.2
Mean			— 0.063	—	2.13
Div., Flex., etc.			. .	+	0.60

9 Draconis, S. P.

	h.	m.	s.
Right Ascension. . .	10	24	19.729
North-Polar Distance .	346°	21′	38″.37

1874.			s.		″
Nov.	4	E.	+ 0.11	+	0.3
	12	E.	— 0.94	—	1.4
	16	E.	— 0.83	+	1.3
Mean			— 0.553	+	0.07
Div., Flex., etc.			. .	+	0.74

ρ Leonis.

	h.	m.	s.
Right Ascension. . .	10	26	10.590
North-Polar Distance .	80°	2′	44″.19

1874.			s.		″
Feb.	27	S.	— 0.11	—	2.4
	28	Sk.	— 0.05	—	1.3
Mar.	29	E.	— 0.01	+	0.1
April	22	E.	— 0.11	—	0.6
	27	E.	— 0.10	—	2.8
	29	E.	— 0.14	—	1.4
May	3	E.	— 0.13	—	1.7
Sept.	25	F.	. .	—	2.3
Dec.	4	S.	— 0.11	—	3.0
	15	F.	— 0.13	—	3.8
Mean			— 0.099	—	1.92
Div., Flex., etc.			. .	+	1.27

l Leonis.

	h.	m.	s.
Right Ascension. . .	10	42	37.972
North-Polar Distance .	78°	47′	18″.10

1874.			s.		″
Mar.	2	F.	— 0.06	+	1.1
	10	F.	— 0.03	+	0.2
	26	F.	— 0.03	+	0.5
	29	E.	0.00	—	1.0
	30	F.	+ 0.02	+	0.5
April	13	Sk.	+ 0.02	—	0.8
	22	E.	0.00	—	0.5
	27	E.	+ 0.01	—	1.1
	29	Sk.	+ 0.15	—	1.6
May	3	E.	+ 0.02	—	1.7
	7	Sk.	+ 0.02		0.0
Dec.	15	F.	— 0.05	—	0.3
Mean			+ 0.006	—	0.39
Div., Flex., etc.			. .	+	1.26

α Ursæ Majoris.

	h.	m.	s.
Right Ascension. . .	10	55	56.073
North-Polar Distance .	27°	34′	10″.01

1874.			s.		″
Mar.	30	F.	+ 0.05	—	1.5
May	11	Ha.	— 0.01		. .
July	23	E.	— 0.04	—	4.0
Sept.	20	E.	+ 0.12	—	1.9
	22	S.	0.00	—	3.1
	25	F.	+ 0.05	—	2.8
Oct.	2	E.	— 0.09	—	3.8
	4	S.	0.17	—	2.4
	12	S.	+ . .	—	1.0
	18	E.	+ 0.01	—	3.1
	28	S.	— 0.22	—	1.7
Dec.	4	S.	— 0.08	—	1.9
	17	S.	+ 0.08	—	0.7
Mean			+ 0.003	—	2.32
Div., Flex., etc.			. .	+	0.74

α Ursæ Majoris (Ref.)

1874.			s.		″
Mar.	11	S.	. .	—	0.6
	20	Sk.	— 0.39	—	0.8
	24	Sk.	. .	—	1.9
	26	F.	— 0.14	—	2.2
April	4	S.	. .	—	0.7
Sept.	21	F.	. .	+	2.1
	23	Sk.	. .	—	2.0
	24	E.	— 0.36	—	2.4
Dec.	9	S.	. .	—	0.5
	31	F.	— 0.16	—	3.7
Mean			— 0.262	—	1.27
Div., Flex., etc.			. .	+	0.60

δ Leonis.

	h.	m.	s.
Right Ascension. . .	11	7	24.361
North-Polar Distance .	68°	47′	9″.85

1874.			s.		″
Feb.	18	F.	— 0.06	—	0.2
Mar.	4	Sk.	— 0.17	+	0.1
	11	S.	— 0.13	—	1.4
	24	Sk.	— 0.02	+	0.7
	28	Sk.	— 0.14	—	0.4
April	4	S.	— 0.04	—	1.5
	13	Sk.	— 0.15	—	1.9
	22	E.	— 0.05	—	1.2
	26	E.	— 0.15		0.0
May	3	E.	— 0.11	—	0.4
	5	Ha.	— 0.18		. .
	8	E.	— 0.04	—	0.9

δ Leonis—Continued.

1874.			s.		″
May	11	Ha.	— 0.08		. .
	21	F.	— 0.04	—	0.4
July	23	E.	— 0.08	—	1.7
	30	E.	— 0.15	—	0.5
Sept.	20	E.	— 0.03	+	1.0
	21	F.	— 0.08	—	0.5
	22	S.	— 0.05	—	1.9
	24	E.	— 0.09	—	1.0
	30	S.	— 0.04	—	1.0
Oct.	1	Sk.	— 0.11	+	0.8
	2	E.	— 0.07	—	1.9
	4	S.	— 0.08	—	1.9
	12	S.	— 0.18	—	0.6
	14	E.	. .	—	2.2
	18	E.	+ 0.04	—	3.2
	19	F.	+ 0.02	—	1.3
Dec.	4	S.	— 0.05	—	0.6
	17	S.	— 0.05	—	1.3
	25	Sk.	— 0.20	—	3.5
	31	F.	— 0.02	—	0.2
Mean			— 0.083	—	0.97
Div., Flex., etc.			. .	+	1.28

δ Leonis (Ref.).

1874.			s.		″
Mar.	26	F.	— 0.11	+	1.6
Dec.	9	S.	. .	—	1.4
Mean			. .	+	0.10
Div., Flex., etc.			. .	—	0.59

δ Crateris.

	h.	m.	s.
Right Ascension. . .	11	13	2.564
North-Polar Distance .	104°	5′	48″.28

1874.			s.		″
Feb.	18	F.	— 0.02	—	0.9
Mar.	11	S.	+ 0.07	—	2.3
	24	Sk.	+ 0.04	+	0.2
	28	Sk.	+ 0.09	—	0.1
April	22	E.	+ 0.11	—	0.4
	26	E.	+ 0.04	—	0.9
	29	Ha.	— 0.03	—	1.0
May	3	E.	— 0.04	—	1.6
	5	Ha.	+ 0.01		. .
	8	E.	— 0.01	—	0.7
	11	Ha.	— 0.01		. .
	21	F.	+ 0.01	+	0.7
July	23	E.	+ 0.01	—	3.0
Oct.	2	E.	+ 0.14	—	0.8
	18	E.	+ 0.10	—	4.2
Dec.	4	S.	+ 0.06	—	2.0
	9	S.	. .	—	0.4
	14	S.	— 0.02	—	0.9
	17	S.	— 0.05	—	1.5
	25	Sk.	0.00	—	2.4
	31	F.	+ 0.19	—	0.7
Mean			+ 0.034	—	1.21
Div., Flex., etc.			. .	+	1.28

τ Leonis.

	h.	m.	s.
Right Ascension. . .	11	21	27.466
North-Polar Distance .	86°	26′	59″.70

1874.			s.		″
Mar.	24	Sk.	— 0.01	—	1.2
April	13	Sk.	— 0.04	—	1.4
	29	E.	+ 0.08	—	1.6
May	3	E.	— 0.01	—	2.5
	5	Ha.	+ 0.01		. .
	7	Sk.	— 0.07	—	1.0
	9	F.	— 0.05	—	0.4
	11	Ha.	— 0.02		. .

τ Leonis—Continued.

1874.			s.		″
May	21	F.	− 0.02	−	1.2
Dec.	14	S.	0.00	+	0.1
	17	S.	− 0.04	−	0.6
Mean			− 0.015	−	1.09
Div., Flex., etc. .			. .	+	1.44

λ Draconis.

	h.	m.	s.
Right Ascension. . .	11	23	53.924
North-Polar Distance .	19°	58′	27″.10

1874.			s.		″
May	5	Ha.	− 0.03		. .
	11	Ha.	+ 0.26		. .
Sept.	24	E.	+ 0.31	−	3.6
Oct.	2	E.	+ 0.11	−	2.6
	12	S.	+ 0.21	−	1.2
Mean			+ 0.172	−	2.47
Div., Flex., etc. .			. .	+	0.64

λ Draconis, S. P.

	h.	m.	s.
Right Ascension. . .	11	23	53.924
North-Polar Distance .	340°	1′	32″.90

1874.			s.		″
Oct.	10	E.	+ 0.15	−	0.5
	20	F.	+ 0.33	+	1.8
	23	E.	− 0.40	+	0.5
Mean			+ 0.027	+	0.06
Div., Flex., etc. .			. .	+	0.83

λ Draconis (Ref.).

1874.			s.		″
May	8	E.	− 0.61	−	2.6
Div., Flex., etc. .			. .	+	0.46

υ Leonis.

	h.	m.	s.
Right Ascension. . .	11	30	29.895
North-Polar Distance .	90°	7′	41″.03

1874.			s.		″
Feb.	27	S.	− 0.04	−	0.5
Mar.	10	F.	− 0.01	−	1.6
April	29	Ha.	− 0.02	−	0.6
May	3	E.	+ 0.03	−	1.4
	5	Ha.	− 0.02		. .
	8	E.	+ 0.02	+	0.3
	9	F.	− 0.05	−	0.1
	11	Ha.	0.00		. .
	21	F.	− 0.06	−	0.9
	28	E.	− 0.09	−	1.2
Dec.	14	S.	− 0.02	−	0.7
Mean			− 0.024	−	0.74
Div., Flex., etc. .			. .	+	1.36

β Leonis.

	h.	m.	s.
Right Ascension. . .	11	42	37.907
North-Polar Distance .	74°	43′	24″.05

1874.			s.		″
Feb.	27	S.	0.00	−	0.3
Mar.	2	F.	+ 0.01	+	1.7
	10	F.	− 0.05	−	0.1
	30	F.	− 0.05		. .
April	25	E.	− 0.01	−	0.1
	29	E.	+ 0.08	−	1.1

β Leonis—Continued.

1874.			s.		″
May	3	E.	+ 0.03	−	0.7
	5	Ha.	− 0.02		. .
	11	Ha.	0.00		. .
	28	E.	− 0.07	+	0.1
July	30	E.	− 0.10	+	1.2
Aug.	6	S.	− 0.01	+	0.6
	15	Sk.	+ 0.04		. .
Sept.	21	F.	− 0.02	−	0.1
	24	E.	+ 0.01	−	1.2
Oct.	1	Sk.	− 0.01	+	2.6
	2	E.	− 0.01	−	1.3
	8	S.	− 0.01	+	0.9
	12	S.	− 0.06	−	0.8
	14	E.	− 0.05	+	0.7
	18	E.	+ 0.03	−	2.4
	19	F.	. .	−	1.1
	28	S.	− 0.13		0.0
Nov.	5	S.	− 0.07		. .
Dec.	14	S.	− 0.05	−	0.3
	24	S.	− 0.02		. .
	25	Sk.	+ 0.02	−	1.4
	31	F.	− 0.02	+	1.0
Mean			− 0.020	−	0.10
Div., Flex., etc. .			. .	+	1.21

γ Ursæ Majoris.

	h.	m.	s.
Right Ascension. . .	11	47	11.662
North-Polar Distance .	35°	36′	16″.99

1874.			s.		″
Sept.	24	E.	− 0.04	−	1.1
Oct.	2	E.	+ 0.08	−	1.3
	18	E.	+ 0.06	−	2.4
	19	F.	+ 0.19	−	1.5
Mean			+ 0.072	−	1.58
Div., Flex., etc. .			. .	+	0.58

ο Virginis.

	h.	m.	s.
Right Ascension. . .	11	58	47.456
North-Polar Distance .	80°	34′	0″.87

1874.			s.		″
Mar.	10	F.	− 0.06	−	1.5
	20	Sk.	− 0.08	−	2.0
	26	F.	− 0.03	+	0.7
April	13	Sk.	− 0.01	−	2.3
	21	Sk.	− 0.15	−	0.1
	29	Ha.	− 0.08	−	2.1
May	5	Ha.	+ 0.02		. .
	7	Sk.	− 0.08	−	1.6
	8	E.	+ 0.08	+	0.2
	9	F.	− 0.07	+	0.1
	11	E.	+ 0.07	+	0.4
	28	E.	− 0.22	+	0.3
Mean			− 0.051	−	0.72
Div., Flex., etc. .			. .	+	1.29

4 Draconis.

	h.	m.	s.
Right Ascension. . .	12	6	16.468
North-Polar Distance .	11°	41′	2″.28

1874.			s.		″
Mar.	26	F.	− 0.43	−	1.9
May	11	E.	+ 0.05	+	1.3
Dec.	24	S.	− 0.30	−	3.9
Mean			− 0.227	−	1.50
Div., Flex., etc. .			. .	+	0.60

4 Draconis, S. P.

	h.	m.	s.
Right Ascension. . .	12	6	16.468
North-Polar Distance .	347°	18′	57″.72

1874.			s.		″
Dec.	15	F.	− 0.47	+	0.9
Div., Flex., etc. .			. .	+	0.75

4 Draconis (Ref.).

1874.			s.		″
May	8	E.	− 1.30	−	2.6
	28	E.	− 0.32	−	1.7
Mean			− 0.810	−	2.15
Div., Flex., etc. .			. .	+	0.45

η Virginis.

	h.	m.	s.
Right Ascension. . .	12	13	27.616
North-Polar Distance .	89°	57′	58″.34

1874.			s.		″
Mar.	4	Sk.	− 0.02	−	0.9
	30	F.	+ 0.09	+	0.7
April	29	Ha.	− 0.04	−	1.7
May	8	E.	+ 0.13	+	0.4
	11	E.	− 0.21	+	2.9
June	21	E.	0.00	+	0.4
Dec.	17	S.	+ 0.06	−	1.1
	24	S.	− 0.03	−	0.5
Mean			− 0.002	+	0.02
Div., Flex., etc. .			. .	+	1.36

η Virginis (Ref.).

1874.			s.		″
Feb.	27	S.	. .	+	2.4
Mar.	20	Sk.	. .	−	0.4
May	9	F.	− 0.16	+	0.8
	28	E.	− 0.07	+	0.3
Dec.	31	F.	+ 0.08	−	0.7
Mean			− 0.050	+	0.48
Div., Flex., etc. .			. .	−	0.52

β Corvi.

	h.	m.	s.
Right Ascension. . .	12	27	46.294
North-Polar Distance .	112°	41′	57″.14

1874.			s.		″
Mar.	20	Sk.	+ 0.04	−	1.3
	26	F.	− 0.01	+	1.5
	30	F.	− 0.07	+	0.5
April	29	Ha.	− 0.01	−	0.4
May	11	E.	+ 0.10	+	3.1
	27	Sk.	+ 0.12	−	1.2
July	19	E.	− 0.03	−	2.4
Dec.	24	S.	− 0.03	−	0.7
Mean			+ 0.014	−	0.11
Div., Flex., etc. .			. .	+	1.59

κ Draconis.

	h.	m.	s.
Right Ascension. . .	12	28	5.691
North-Polar Distance .	19°	31′	2″.63

1874.			s.		″
Dec.	17	S.	0.00	−	2.5
Div., Flex., etc. .			. .	+	0.62

κ Draconis, S. P.

Right Ascension . . 12h 28m 5.691s

North-Polar Distance . 340° 28′ 57″.37

1874.			s.		″
Nov.	4	E.	− 0.52	+	0.4
Dec.	2	E.	− 0.11	−	0.2
Mean			− 0.315	+	0.10
Div., Flex., etc. .			. .	−	0.82

κ Draconis (Ref.).

1874.			s.		″
May	8	E.	− 0.29	−	2.8
	9	F.	− 0.79	−	2.0
Mean			− 0.540	−	2.40
Div., Flex., etc. .			. .	+	0.44

32¹ Camelopardalis.

Right Ascension . . 12h 48m 13.432s

North-Polar Distance . 5° 54′ 9″.36

1874.			s.		″
Dec.	17	S.	− 7.86	−	21.3
Div., Flex., etc. .			. .	+	0.77

32¹ Camelopardalis, S. P.

Right Ascension . . 12h 48m 13.432s

North-Polar Distance . 354° 5′ 50″.64

1874.			s.		″
Oct.	12	F.	− 8.36	+	21.7
	20	F.	. .	+	20.6
	26	Sk.	− 6.55	+	20.9
Dec.	2	E.	− 7.96	+	19.1
Mean			− 7.623	+	20.58
Div., Flex., etc. .			. .	+	0.92

32² Camelopardalis.

Right Ascension . . 12h 48m 13 432s

North-Polar Distance . 5° 54′ 9″.36

1874.			s.		″
Dec.	17	S.	− 0.06	−	3.0
Div., Flex., etc. .			. .	+	0.77

32² Camelopardalis, S. P.

Right Ascension . . 12h 48m 13.432s

North-Polar Distance . 354° 5′ 50″.64

1874.			s.		″
Oct.	12	F.	− 0.29	+	2.7
	20	F.	. .	+	4.4
	26	Sk.	+ 0.59	+	2.4
Dec.	2	E.	− 0.56	+	1.3
Mean			− 0.087	+	2.70
Div., Flex., etc. .			. .	+	0.92

12 Canum Venaticorum.

Right Ascension . . 12h 50m 7.869s

North-Polar Distance . 51° 0′ 2″.13

1874.			s.		″
Mar.	4	Sk.	− 0.21	−	0.1
	26	F.	− 0.04	+	0.5
	30	F.	− 0.04	−	1.6
April	21	Sk.	− 0.02	+	0.8
	26	E.	− 0.01	+	0.4
	29	Sk.	− 0.16	−	0.1
May	8	E.	− 0.21	+	0.1
	11	E.	+ 0.12	+	1.3
	27	Sk.	− 0.12	−	0.3
	28	E.	− 0.01	+	0.5
June	4	Sk.	+ 0.09	+	0.5
	9	E.	+ 0.02		0.0
	20	Sk.	+ 0.04	+	0.5
	21	E.	− 0.02	−	0.1
July	19	E.	+ 0.04	−	0.5
Aug.	15	Sk.	+ 0.12	+	1.1
	26	Sk.	0.00	+	2.9
Sept.	18	F.	+ 0.06	+	1.5
	21	E.	+ 0.02	+	0.9
	25	E.	− 0.04	+	0.7
	26	F.	+ 0.12	+	0.3
Oct.	2	Sk.	− 0.16	+	0.2
	14	E.	− 0.16	−	1.1
	18	E.	+ 0.08	+	1.9
	22	E.	− 0.10	−	2.5
	25	Sk.	0.00	+	2.3
Nov.	6	Sk.	+ 0.06	−	1.1
	12	F.	− 0.08	+	1.0
	15	E.	0.00	−	0.7
Dec.	4	S.	− 0.07	−	1.0
	24	S.	+ 0.02	+	0.5
	25	Sk.	− 0.01	−	2.7
	31	F.	− 0.07	+	1.4
Mean			− 0.022	+	0.23
Div., Flex., etc. .			. .	+	0.52

θ Virginis.

Right Ascension . . 13h 3m 25.683s

North-Polar Distance . 94° 51′ 55″.93

1874.			s.		″
Jan.	11	Sk.	+ 0.02	−	0.8
Mar.	4	Sk.	− 0.16	−	0.4
	26	F.	− 0.10	−	0.3
	30	F.	− 0.10		0.0
April	26	E.	0.00		0.0
	29	Sk.	0.00	−	0.3
May	9	F.	− 0.02	−	0.7
	11	E.	+ 0.07	+	0.1
	18	S.	0.00	−	1.9
	21	F.	− 0.04	−	0.8
	28	E.	− 0.01	−	0.8
	30	S.	− 0.08		. .
June	1	E.	+ 0.03	−	2.2
	4	Sk.	− 0.05	+	0.4
	9	E.	+ 0.03	−	0.5
	20	Sk.	− 0.05	−	1.6
	21	E.	− 0.05	+	1.0
July	19	E.	− 0.01	−	0.8
Mean			− 0.029	−	0.56
Div., Flex., etc. .			. .	+	1.44

α Virginis.

Right Ascension . . 13h 18m 33.448s

North-Polar Distance . 100° 30′ 9″.69

1874.			s.		″
Mar.	4	Sk.	+ 0.04	+	0.4
April	26	E.	+ 0.02	+	0.6

α Virginis—Continued.

1874.			s.		″
May	8	E.	+ 0.11	+	0.5
	11	E.	− 0.06	+	0.6
	13	F.	+ 0.01	−	0.2
	22	S.	+ 0.05		. .
June	1	E.	+ 0.09	+	0.3
	9	E.	− 0.05	+	0.2
	13	E.	− 0.02	+	1.9
	20	Sk.	− 0.04	+	0.7
	21	E.	− 0.05	+	0.1
	22	F.	− 0.01	+	1.0
July	19	E.	− 0.01	−	0.8
Sept.	18	F.	+ 0.04	−	2.1
	21	E.	− 0.05	−	1.8
	24	Sk.	+ 0.01	−	0.5
	25	E.	− 0.07		0.0
	26	F.	− 0.08	−	1.2
Oct.	2	Sk.	− 0.08	−	0.5
	3	E.	+ 0.02	−	1.1
	28	S.	− 0.10	−	1.3
Nov.	6	Sk.	− 0.03	−	1.9
	10	Sk.	− 0.04	−	0.8
	11	E.	. .	−	0.7
	12	F.	− 0.15	−	0.6
	15	E.	− 0.06	−	0.1
Dec.	31	F.	− 0.09	+	0.6
Mean			− 0.023	−	0.26
Div., Flex., etc. .			. .	+	1.22

α Virginis (Ref.).

1874.			s.		″
May	28	E.	− 0.06	+	2.7
Div., Flex., etc. .			. .	−	0.66

ζ Virginis.

Right Ascension . . 13h 28m 16.443s

North-Polar Distance . 89° 57′ 2″.23

1874.			s.		″
Jan.	11	Sk.	− 0.06	+	0.1
Mar.	7	S.	+ 0.06	−	0.6
	11	E.	− 0.02	+	1.3
June	13	E.	− 0.09	−	0.2
July	19	E.	− 0.05	−	0.1
Sept.	26	F.	+ 0.01	+	0.4
Nov.	6	Sk.	0.00	−	0.1
	12	F.	0.00	−	1.0
	24	F.	. .	−	0.4
Dec.	31	F.	− 0.03	−	1.4
Mean			− 0.020	−	0.20
Div., Flex., etc. .			. .	+	1.36

η Ursæ Majoris.

Right Ascension . . 13h 42m 34.482s

North-Polar Distance . 40° 3′ 25″.95

1874.			s.		″
June	22	F.	+ 0.06	−	1.5
Sept.	18	F.	− 0.03	+	1.0
	23	S.	− 0.04	−	1.5
	25	E.	− 0.11	−	0.7
	26	F.	+ 0.10	−	0.6
Oct.	1	S.	− 0.03	−	1.2
	3	E.	− 0.04	−	2.5
Nov.	11	E.	0.00	−	2.0
	12	F.	0.00	+	0.4
	15	E.	+ 0.07	+	0.1
	24	F.	− 0.12	−	2.3
Mean			− 0.013	−	0.98
Div., Flex., etc. .			. .	+	0.38

η URSÆ MAJORIS (Ref.).

1874.				s.		"
May	27	Sk.		. .	—	0.7
Nov.	6	Sk.	+	0.36	—	2.9
Mean				. .	—	1.80
Div., Flex., etc. .				. .	+	0.66

η BOOTIS.

	h.	m.	s.
Right Ascension. . .	13	48	41.163
North-Polar Distance .	70°	58′	10″.25

1874.				s.		"
April	29	Sk.	+	0.16	—	0.8
May	11	E.	—	0.26	+	1.0
	13	F.	+	0.01	—	0.9
	18	S.	—	0.07	—	1.4
	19	Sk.	—	0.05		0.0
	21	F.	—	0.07	—	0.3
	26	S.	—	0.17	—	0.2
June	1	E.	+	0.05	+	0.8
	13	E.	+	0.05	+	0.8
	22	F.	—	0.01		0.0
July	19	E.	—	0.18	—	0.1
Sept.	18	F.	—	0.05	—	0.5
	21	Sk.	—	0.07	+	0.3
	25	E.	—	0.12	+	1.6
	26	F.	—	0.09	+	1.2
Oct.	1	S.	—	0.12		0.0
	2	Sk.	—	0.09	+	2.1
	3	E.	—	0.13	+	0.2
Nov.	11	E.	—	0.04	—	1.7
	12	F.	—	0.06	+	0.7
	15	E.	—	0.04	+	0.9
	26	Sk.	+	0.01	—	2.9
Mean			—	0.073	+	0.04
Div., Flex., etc. .				. .	+	1.24

α DRACONIS.

	h.	m.	s.
Right Ascension. . .	14	0	58.757
North-Polar Distance .	25°	1′	19″.04

1874.				s.		"
Jan.	10	S.	—	0.37	—	2.7
May	22	S.	+	0.16	—	2.6
	26	S.	—	0.31		. .
June	15	S.	—	0.35	—	2.5
Sept.	25	E.	—	0.04	—	1.5
	26	F.	+	0.17	—	4.0
Oct.	1	S.	—	0.01	—	3.7
	3	E.	—	0.06	—	2.1
	15	E.	—	0.03	—	4.0
Nov.	11	E.	+	0.10	—	4.4
	12	F.	—	0.03	—	3.1
	15	E.	+	0.10	—	1.6
	24	F.	+	0.04		. .
Mean			—	0.048	—	2.93
Div., Flex., etc. .				. .	+	0.83

α DRACONIS, S. P.

	h.	m.	s.
Right Ascension. . .	14	0	58.757
North-Polar Distance .	334°	58′	40″.96

1874.				s.		"
Jan.	10	S.	—	0.13	+	3.4
Div., Flex., etc. .				. .	+	0.78

α DRACONIS (Ref.).

1874.				s.		"
May	18	S.		. .	—	1.7
June	22	F.	—	0.07	—	3.6
Mean				. .	—	2.65
Div., Flex., etc. .				. .	+	0.58

α BOOTIS.

	h.	m.	s.
Right Ascension. . .	14	9	54.879
North-Polar Distance .	70°	9′	37″.02

1874.				s.		"
Jan.	10	Ha.	—	0.01	—	0.2
May	19	Sk.	+	0.01	+	0.7
	27	Sk.		. .	+	2.2
June	9	E.	+	0.05	+	0.8
	13	E.	+	0.06	+	1.6
	15	S.	—	0.03	—	0.5
	18	F.	+	0.01	—	0.4
Sept.	21	E.	—	0.08	+	1.7
	22	F.		0.00	—	0.4
	23	S.	—	0.06	+	0.9
	25	E.	—	0.05	+	2.5
	26	F.	—	0.03	+	1.6
Oct.	3	E.	—	0.03	+	0.2
	5	S.	+	0.06	—	0 2
	15	E.	—	0.09	+	1.1
Nov.	11	E.		0.00	—	1.4
	12	F.	—	0.06	—	0.2
	13	S.	+	0.02	—	2.2
	15	E.	—	0.02	+	1.3
	26	Sk.	—	0.08	—	1.0
	29	S.	—	0.01		0.0
Dec.	4	Sk.	+	0.04	—	0.3
Mean			—	0.014	+	0.39
Div., Flex., etc. .				. .	+	1.27

α BOOTIS (Ref.)

1874.				s.		"
May	22	S.		. .	+	1.0
	26	S.		. .	+	1.2
	27	Sk.		. .	+	2.2
June	22	F.	—	0.02	+	1.7
Oct.	1	S.		. .	+	4.1
	2	Sk.	+	0.06	+	1.4
Mean			+	0.020	+	1.93
Div., Flex., etc. .				. .	—	0.62

θ BOOTIS.

	h.	m.	s.
Right Ascension. . .	14	20	54.401
North-Polar Distance .	37°	33′	57″.56

1874.				s.		"
June	9	E.	+	0.24	—	0.8
Sept.	26	F.	+	0.16	—	0.8
Oct.	1	S.	+	0.15	—	1.3
Nov.	10	Sk.	+	0.51	—	0.6
	12	F.	+	0.10	+	0.5
	24	F.	+	0.16	—	0.7
Mean			+	0.220	—	0.62
Div., Flex., etc. .				. .	+	0.46

θ BOOTIS (Ref.).

1874.				s.		"
May	26	S.		. .	—	0.9
Div., Flex., etc. .				. .	+	0.63

5 URSÆ MINORIS.

	h.	m.	s.
Right Ascension. . .	14	27	48.985
North-Polar Distance .	13°	44′	39″.56

1874.				s.		"
May	26	S.	—	0.25	—	1.2
June	18	F.	+	0.04	—	1.7
	22	F.	+	0.20	—	0.8
Nov.	10	Sk.	—	0.17	—	4.2
	12	F.	+	0.29	—	3.8
	24	F.	+	0.17	—	3.6
Mean			+	0.047	—	2.55
Div., Flex., etc. .				. .	+	0.60

5 URSÆ MINORIS, S. P.

	h.	m.	s.
Right Ascension. . .	14	27	48.985
North-Polar Distance .	346°	15′	20″.44

1874.				s.		"
Jan.	10	S.	+	0.09	—	0.9
	14	S.	—	0.30	—	0.8
Oct.	13	S.	+	0.77	+	0.4
Nov.	6	S.	+	0.25	—	0.4
Dec.	2	E.	—	0.25		. .
	14	E.	+	0.04	+	2.3
	18	E.	—	0.36	+	3.1
	22	E.	—	0.39	+	1.0
Mean			—	0.019	+	0.67
Div., Flex., etc. .				. .	+	0.74

ε BOOTIS.

	h.	m.	s.
Right Ascension. . .	14	39	29.089
North-Polar Distance .	62°	23′	35″.90

1874.				s.		"
Jan.	11	Sk.	—	0.03	+	0.3
May	9	F.	—	0.03		. .
June	1	E.	—	0.04	—	1.8
	4	Sk.	—	0.01	—	0.3
	9	E.	+	0.08	—	1.5
	22	F.		. .	—	1.8
	24	Sk.	—	0.01	—	1.8
Sept.	21	F	—	0.10	+	1.0
	23	S.	—	0.06	+	0.4
	24	Sk.	—	0.05	+	0.5
	25	E.		. .	+	2.3
	26	F.	—	0 06	—	0.5
Oct.	3	E.	—	0.08		0.0
	5	S.	—	0.06	—	0.6
	15	E.	—	0.12		0.0
	19	E.	—	0.08	—	2.2
Nov.	10	Sk.		0.00	—	1.9
	11	E.	—	0.03	—	2.7
	13	S.	+	0.02	—	2.7
	24	F.	—	0.09	—	0.4
	26	Sk.	—	0.03	—	0.4
	29	S.		0.00	—	0.6
Dec.	4	Sk.	+	0.06	—	1.6
	17	E.	—	0.11	—	0.6
Mean			—	0.038	—	0.73
Div., Flex., etc. .				. .	+	1.16

ε BOOTIS (Ref.).

1874.				s.		"
June	18	F.	—	0 03	+	0.3
Div., Flex., etc. .				. .	—	0.34

a^2 LIBRÆ.

	h.	m.	s.
Right Ascension. . .	14	43	54.627
North-Polar Distance .	105°	30′	59″.29

1874.				s.		"
May	9	F.	+	0.07	—	2.9
	13	F.	—	0.01	+	0.1
	22	S.	+	0.03	+	0.2
June	18	F.	+	0.10		0.0
	22	F.	—	0.04	—	0.1
	24	Sk.	+	0.05	—	2.1
Sept.	21	F.	+	0.07	+	1.0
	22	F.	+	0.11	—	0.6
	24	Sk.	+	0.01	+	1.5
	25	E.		. .	+	2.1
	26	F.	+	0.02		0.0
Oct.	3	E.	+	0.06	+	0.9
	19	E.	+	0.08	+	0.4
Nov.	24	F.	+	0.05	—	0.1
	26	Sk.	+	0.11	—	0.1
Dec.	17	E.	—	0.09	+	0.8
Mean			+	0.041	+	0.07
Div., Flex., etc. .				. .	+	1.30

β URSÆ MINORIS.

Right Ascension . . 14 h 51 m 5.643 s

North-Polar Distance . 15° 19′ 47.″91

1874.			s.		″
Jan.	12	E.	−0.73	−	2.5
June	18	F.	+0.03	−	2.5
	19	S.	−0.16	−	1.8
Sept.	23	S.	+0.29	−	2.9
	25	E.	. .	−	0.6
	26	F.	+0.24	−	2.8
Oct.	3	E.	+0.02	−	3.2
	15	E.	−0.09	−	1.3
	19	E.	−0.05	−	5.0
	20	F.	+0.21	−	2.7
Nov.	23	E.	+0.16	−	1.8
	24	F.	−0.05	−	2.4
Dec.	17	E.	−0.11	−	2.0
Mean			−0.020	−	2.42
Div., Flex., etc. .			. .	+	0.58

β URSÆ MINORIS, S. P.

Right Ascension . . 14 h 51 m 5.643 s

North-Polar Distance . 344° 40′ 12.″09

1874.			s.		″
Jan.	14	S.	−0.17		0.0
June	9	F.	−0.23	+	1.2
Aug.	4	E.	+0.51	+	2.5
Oct.	13	S.	+0.25	+	1.9
Dec.	14	E.	+0.06	+	2.9
	18	E.	+0.16	+	1.9
Mean			+0.097	+	1.73
Div., Flex., etc. .			. .	+	0.74

β BOOTIS.

Right Ascension . . 14 h 57 m 11.988 s

North-Polar Distance . 49° 6′ 41.″00

1874.			s.		″
Jan.	11	Sk.	+0.05	−	1.6
	12	E.	−0.20	+	0.6
May	28	E.	−0.02	−	1.0
June	1	E.	+0.15	−	1.5
	4	Sk.	+0.01	−	2.7
	18	F.	−0.05	−	1.0
	24	Sk.	+0.04	−	0.9
	25	E.	−0.07	−	0.1
	26	F.	. .	−	2.1
Oct.	3	E.	−0.01	−	0.9
	15	E.	−0.14	−	0.6
	19	E.	0.00	−	2.6
Nov.	24	F.	+0.04	+	0.2
Mean			−0.017	−	1.09
Div., Flex., etc. .			. .	+	0.31

β LIBRÆ.

Right Ascension . . 15 h 10 m 13.715 s

North-Polar Distance . 98° 54′ 57.″98

1874.			s.		″
Jan.	12	E.	−0.10	−	0.5
Mar.	7	S.	+0.08	−	0.6
May	11	Sk.	+0.16	+	1.3
	18	S.	−0.05	−	0.6
June	17	E.	+0.02	−	0.7
	18	F.	−0.06	+	0.5
July	15	E.	. .	−	0.1
Sept.	26	F.	−0.02	−	0.3
Oct.	3	E.	−0.01	−	0.6
	15	E.	−0.01	+	0.9
Nov.	24	F.	+0.05	−	0.1
Dec.	10	F.	−0.01	+	0.1
	17	E.	−0.12	+	0.4
Mean			−0.006	−	0.02
Div., Flex., etc. .			. .	+	1.20

β LIBRÆ (Ref.).

1874.			s.		″
June	24	Sk.	. .	+	1.7
Div., Flex., etc. .			. .	−	0.70

μ¹ BOOTIS.

Right Ascension . . 15 h 19 m 43.895 s

North-Polar Distance . 52° 10′ 46.″91

1874.			s.		″
Mar.	7	S.	−0.08	−	0.2
May	19	Sk.	−0.10	−	1.1
	27	Sk.	−0.10	−	0.6
	29	F.	−0.06	−	1.0
June	4	Sk.	−0.11	+	0.2
	19	S.	−0.06	−	1.2
	22	F.	+0.02	+	0.7
July	7	E.	−0.08	+	0.1
	15	E.	+0.03	+	1.5
	18	E.	−0.02	+	0.8
	23	E.	−0.05	+	1.0
Sept.	26	F.	−0.01	−	0.1
Oct.	15	E.	−0.15	+	2.8
	19	E.	−0.17	−	1.6
Nov.	24	F.	. .	−	1.2
Dec.	14	F.	+0.05	−	2.3
	17	E.	−0.13	−	0.8
Mean			−0.064	−	0.18
Div., Flex., etc. .			. .	+	0.68

γ² URSÆ MINORIS.

Right Ascension . . 15 h 20 m 56.637 s

North-Polar Distance . 17° 43′ 3.″07

1874.			s.		″
Jan.	14	S.	−0.42	−	1.1
Sept.	26	F.	+0.29	+	0.1
Oct.	3	E.	−0.11	−	1.4
	15	E.	−0.36	+	1.6
Dec.	10	F.	+0.24	+	0.1
	14	F.	−0.08	+	1.3
	17	E.	+0.03	+	0.5
	20	Sk.	+0.26	−	1.1
Mean			−0.019		0.00
Div., Flex., etc. .			. .	+	0.60

γ² URSÆ MINORIS, S. P.

Right Ascension . . 15 h 20 m 56.637 s

North-Polar Distance . 342° 16′ 56.″93

1874.			s.		″
Jan.	15	Sk.	+0.41	−	2.6
Oct.	31	E.	+0.01	−	1.0
Dec.	18	E.	−0.12	−	2.1
	21	Sk.	−0.21	−	1.9
	22	E.	−0.40	−	0.8
Mean			−0.062	−	1.68
Div., Flex., etc. .			. .	+	0.76

α CORONÆ BOREALIS.

Right Ascension . . 15 h 29 m 21.214 s

North-Polar Distance . 62° 51′ 34.″98

1874.			s.		″
May	19	Sk.	+0.07	+	0.7
	21	F.	−0.02	+	0.3
	22	S.	+0.14	+	0.3
June	17	E.	−0.08	−	0.6
	29	E.	−0.11		0.0
July	19	E.	−0.04	+	0.6
	23	E.	0.00	+	0.4

α CORONÆ BOREALIS—Continued.

1874.			s.		″
Sept.	26	F.	+0.01	+	0.5
Oct.	2	Sk.	−0.04	+	2.6
	3	E.	−0.05	−	1.0
	5	S.	−0.02	+	0.7
	15	E.	−0.08	−	0.6
	23	E.	. .		0.0
	26	Sk.	0.00	+	3.1
	27	E.	−0.04	+	1.2
Nov.	4	E.	−0.11	. .	
	24	F.	+0.04	−	0.4
Dec.	10	F.	. .	+	1.4
	14	F.	−0.03		0.0
	17	E.	−0.08	+	1.4
	18	F.	−0.04	−	1.6
	20	Sk.	+0.06	−	0.3
Mean			−0.016	+	0.41
Div., Flex., etc. .			. .	+	1.17

α SERPENTIS.

Right Ascension . . 15 h 38 m 3.738 s

North-Polar Distance . 83° 10′ 34.″27

1874.			s.		″
May	19	Sk.	+0.02	−	0.1
	21	F.	+0.03	−	1.3
	27	Sk.	+0.01	−	0.1
	28	E.	−0.02	−	0.9
June	29	E.	−0.04	. .	
July	15	E.	+0.13	−	0.4
	18	E.	+0.04		0.0
	19	E.	+0.05	−	1.9
Sept.	26	F.	+0.03	−	0.4
Oct.	2	Sk.	−0.02	+	2.6
	3	E.	−0.02	−	0.1
	5	S.	+0.07	−	1.2
	15	E.	+0.01	+	0.8
	19	E.	0.00	−	0.8
	27	E.	−0.06	−	0.2
Nov.	24	F.	+0.15	−	0.7
Dec.	14	F.	+0.13	−	0.1
	17	E.	0.00	+	0.2
	18	F.	−0.02	−	1.3
	20	Sk.	+0.05	−	0.9
Mean			+0.027	−	0.36
Div., Flex., etc. .			. .	+	1.40

ε SERPENTIS.

Right Ascension . . 15 h 44 m 32.190 s

North-Polar Distance . 85° 8′ 28.″62

1874.			s.		″
May	22	S.	+0.05	−	1.0
	26	S.	−0.06	−	1.8
	28	E.	−0.11	−	1.5
	29	F.	0.00	−	1.7
June	24	Sk.	−0.10	−	0.5
	29	E.	−0.03	−	0.6
July	7	E.	−0.09		0.0
	15	E.	+0.12	−	0.3
	18	E.	−0.01	+	0.1
	19	E.	+0.02	−	1.5
Oct.	2	Sk.	−0.13	+	1.4
	3	E.	0.00		0.0
	15	E.	+0.09	−	0.4
	19	E.	−0.07	−	0.7
Nov.	24	F.	0.00	−	1.2
Dec.	14	F.	+0.05	+	0.4
	17	E.	−0.02	−	0.5
	20	Sk.	+0.01	−	0.2
Mean			−0.016	−	0.54
Div., Flex., etc. .			. .	+	1.45

ζ Ursæ Minoris.

	h.	m.	s.
Right Ascension. . .	15	48	36.204
North-Polar Distance .	11°	49′	8.″24

1874.			s.		″
June	29	E.	− 0.05	−	0.6
July	18	E.	+ 0.10	−	0.9
	19	E.	+ 0.36	−	0.5
Dec.	18	F.	+ 0.08	−	1.3
	20	Sk.	− 0.08	−	1.8
Mean			+ 0.082	−	1.02
Div., Flex., etc. .			. .	+	0.60

ζ Ursæ Minoris, S. P.

	h.	m.	s.
Right Ascension. . .	15	48	36.204
North-Polar Distance .	348°	10′	51.″76

1874.			s.		″
Dec.	19	F.	− 0.19	.	.
	21	Sk.	. .	−	0.5
Div., Flex., etc. .			. .	+	0.75

ζ Ursæ Minoris (Ref.).

1874.			s.		″
July	15	E.	+ 0.01	+	0.4
Div., Flex., etc. .			. .	+	0.45

ε Coronæ Borealis.

	h.	m.	s.
Right Ascension. . .	15	52	22.384
North-Polar Distance .	62°	45′	20.″03

1874.			s.		″
June	13	E.	+ 0.04	+	0.5
	22	F.	− 0.06	.	.
Dec.	14	F.	+ 0.01	+	1.1
	17	E.	− 0.14	−	0.5
Mean			− 0.038	+	0.37
Div., Flex., etc. .			. .	+	1.17

δ Scorpii.

	h.	m.	s.
Right Ascension. . .	15	52	53.135
North-Polar Distance .	112°	15′	38.″12

1874.			s.		″
May	29	F.	− 0.05	+	0.2
	30	S.	− 0.02	+	1.5
June	18	F.	+ 0.04	+	2.2
July	7	E.	+ 0.07	+	1.0
	23	E.	+ 0.12	−	0.8
Mean			+ 0.032	+	0.82
Div., Flex., etc. .			. .	+	1.57

β¹ Scorpii.

	h.	m.	s.
Right Ascension. . .	15	58	6.742
North-Polar Distance .	109°	27′	30.″72

1874.			s.		″
May	30	S.	+ 0.06		0.0
June	19	S.	+ 0.04	−	1.3

β¹ Scorpii—Continued.

1874.			s.		″
July	7	E.	+ 0.11		0.0
	23	E.	+ 0.13	+	0.7
	30	E.	. .	+	0.3
Dec.	14	F.	+ 0.01	−	0.8
	17	E.	− 0.04	−	1.4
	18	F.	+ 0.05	−	3.5
Mean			+ 0.051	−	0.75
Div., Flex., etc. .			. .	+	1.36

Groombridge 2320, S. P.

	h.	m.	s.
Right Ascension. . .	16	5	58.994
North-Polar Distance .	338°	8′	31.″95

1874.			s.		″
Dec.	22	E.	− 0.03	−	3.4
Div., Flex., etc. .			. .	+	0.83

δ Ophiuchi.

	h.	m.	s.
Right Ascension. . .	16	7	44.616
North-Polar Distance .	93°	22′	4.″00

1874.			s.		″
May	11	Sk.	. .	+	0.8
	27	Sk.	+ 0.08	+	0.1
	28	E.	− 0.08	+	0.5
	30	S.	0.00	+	0.8
June	1	E.	+ 0.01	+	1.0
	13	E.	+ 0.14	+	0.8
July	17	S.	− 0.04	−	0.6
	23	E.	+ 0.07	−	0.3
	30	E.	− 0.02	−	0.4
Oct.	26	Sk.	+ 0.04	+	1.9
Dec.	10	F.	+ 0.03	+	0.5
	14	F.	+ 0.05		0.0
	17	E.	− 0.03	+	0.8
	18	F.	+ 0.08	−	1.0
	29	E.	+ 0.04	−	0.2
Mean			+ 0.026	+	0.31
Div., Flex., etc. .			. .	+	1.41

τ Herculis.

	h.	m.	s.
Right Ascension. . .	16	15	57.115
North-Polar Distance .	43°	23′	8.″10

1874.			s.		″
May	11	Sk.	+ 0.16	+	2.0
	30	S.	+ 0.02	−	0.3
June	13	E.	+ 0.28	−	0.1
July	30	E.	+ 0.37	−	0.1
Oct.	19	E.	+ 0.15	−	2.6
Nov.	12	E.	+ 0.22	−	1.5
Dec.	10	F.	+ 0.31	+	2.9
	14	F.	+ 0.31	+	0.1
	17	E.	+ 0.22	+	0.1
	18	F.	+ 0.40	−	0.6
Mean			+ 0.244	−	0.01
Div., Flex., etc. .			. .	+	0.31

τ Herculis (Ref.).

1874.			s.		″
July	15	E.	+ 0.37	−	0.5
Div., Flex., etc. .			. .	+	0.68

α Scorpii.

	h.	m.	s.
Right Ascension. . .	16	21	41.086
North-Polar Distance .	116°	9′	0.″17

1874.			s.		″
May	26	S.	− 0.00	−	0.2
	30	S.	− 0.01	.	.
July	13	S.	− 0.07	+	0.4
	30	E.	− 0.11	−	0.5
Oct.	15	E.	− 0.05	+	0.2
	19	E.	+ 0.01	−	2.5
	26	Sk.	+ 0.08	+	1.8
Nov.	7	Sk.	+ 0.04	+	1.5
Dec.	10	F.	+ 0.05	−	1.5
	17	E.	0.00	−	1.2
	18	F.	− 0.04	−	2.9
	22	F.	− 0.04	+	0.1
	29	E.	+ 0.08	−	0.3
Mean			− 0.005	−	0.42
Div., Flex., etc. .			. .	+	1.58

η Draconis.

	h.	m.	s.
Right Ascension. . .	16	22	17.379
North-Polar Distance .	28°	12′	0.″67

1874.			s.		″
Dec.	18	F.	. .	−	0.1
Div., Flex., etc. .			. .	+	0.74

A Draconis.

	h.	m.	s.
Right Ascension. . .	16	28	14.383
North-Polar Distance .	20°	57′	33.″54

1874.			s.		″
July	17	E.	− 0.27	−	0.3
Div., Flex., etc. .			. .	+	0.72

ζ Ophiuchi.

	h.	m.	s.
Right Ascension. . .	16	30	13.323
North-Polar Distance .	100°	18′	34.″30

1874.			s.		″
May	11	Sk.	+ 0.08	+	3.5
	18	S.	+ 0.02	−	0.8
	30	S.	+ 0.06	.	.
June	17	E.	+ 0.15	+	2.4
July	13	S.	− 0.03	+	0.7
Aug.	3	S.	+ 0.05	.	.
Oct.	15	E.	− 0.10	+	1.9
	19	E.	+ 0.05	+	0.2
	26	Sk.	− 0.02	.	.
Nov.	7	Sk.	+ 0.18	+	3.0
Dec.	14	F.	+ 0.15	+	2.6
	17	E.	− 0.05	+	1.0
	18	F.	− 0.06	−	1.0
	22	F.	0.00	+	2.0
	29	E.	+ 0.06	+	0.5
Mean			+ 0.036	+	1.33
Div., Flex., etc. .			. .	+	1.21

η Herculis.

	h.	m.	s.
Right Ascension. . .	15	38	31.608
North-Polar Distance .	50°	50′	11.″61

1874.			s.		″
Jan.	11	E.	− 0.04	−	1.6
July	6	Sk.	− 0.03	+	0.7
	8	Sk.	− 0.08	+	0.8

η Herculis—Continued.

1874.				s.		″
July	13	S.	+	0.05	+	1.2
Aug.	3	S.	+	0.03		. .
Oct.	15	E.	—	0.02	+	1.6
	19	E.	—	0.05		0.0
	26	Sk.	—	0.07	+	2.9
Nov.	7	Sk.	+	0.06	+	3.9
Dec.	14	F.		0.00	+	3.0
	17	E.	—	0.02	+	3.0
	18	F.	+	0.10		0.0
	22	F.		0.00	+	4.2
	29	E.	—	0.11	+	1.1
Mean			—	0.013	+	1.60
Div., Flex., etc.				. .	+	0.49

κ Ophiuchi.

	h.	m.	s.
Right Ascension. . .	16	51	42.243
North-Polar Distance .	80°	25′	37″.25

1874.				s.		″
Jan.	11	E.	+	0.16	—	0.9
May	3	Sk.	+	0.03		. .
	26	S.	+	0.10	+	0.2
	29	F.	+	0.06	—	0.3
June	29	E.		0.00	+	0.7
July	7	E.	+	0.09	+	0.5
	17	S.	—	0.05	+	0.1
Aug.	3	S.	+	0.07		. .
	4	E.	+	0.03	—	0.6
	15	Sk.	+	0.02	+	1.4
Oct.	15	E.	—	0.01	+	2.0
	19	E.	—	0.01	—	0.6
Nov.	7	Sk.	+	0.14	+	4.5
	14	S.	+	0.10	+	0.2
	27	Sk.	+	0.11	+	0.2
Dec.	17	E.	+	0.11	+	2.5
	22	F.	+	0.05	+	2.9
Mean			+	0.059	+	0.85
Div., Flex., etc.				. .	+	1.28

d Herculis.

	h.	m.	s.
Right Ascension. . .	16	56	57.117
North-Polar Distance .	56°	14′	51″.34

1874.				s.		″
Mar.	10	S.	+	0.20	—	0.2
June	1	E.	+	0.19	—	0.1
	24	Sk.	+	0.12	+	1.4
	29	E.	+	0.19	+	0.9
July	7	E.	+	0.17	+	0.6
	8	Sk.	+	0.06	+	0.5
Dec.	22	F.	+	0.32	+	2.9
Mean			+	0.179	+	0.73
Div, Flex., etc.				. .	+	1.08

ε Ursæ Minoris.

	h.	m.	s.
Right Ascension. . .	16	58	57.285
North-Polar Distance .	7°	45′	31″.95

1874.				s.		″
Jan.	11	E.	—	1.75	—	3.0
	14	Sk.	+	1.39	—	2.8
May	26	S.		. .	—	0.1
June	18	F.	—	0.17δ, 51	—	0.4
July	17	S.	—	0.28	+	0.1
Aug.	4	E.	—	0.03δ, 51	—	1.5
Oct.	15	E.	—	0.07	+	0.4
Dec.	29	E.		. .	—	0.4
Mean			—	0.178	—	0.96
Div., Flex., etc.				. .	+	0.63

ε Ursæ Minoris, S. P.

	h.	m.	s.
Right Ascension. . .	16	58	57.285
North-Polar Distance .	352°	14′	28″.05

1874.				s.		″
Jan.	16	E.	+	0.14	—	2.2
Aug.	4	E.	+	1.94δ, 51	—	0.6
Oct.	31	E.		. .	—	1.8
Nov.	21	F.	—	0.83	+	1.3
Dec.	8	S.		. .	—	2.2
	9	Sk.		. .	—	0.5
Mean			—	0.345	—	1.00
Div., Flex., etc.				. .	+	0.84

α¹ Herculis.

	h.	m.	s.
Right Ascension. . .	17	8	54.147
North-Polar Distance .	75°	27′	50″.79

1874.				s.		″
Jan.	9	S.	—	0.02		. .
	11	E.	+	0.12	—	1.0
May	3	Sk.	+	0.02		. .
June	1	E.	—	0.02	—	2.0
	17	E.		0.00	+	1.3
	29	E.	—	0.06	—	0.1
July	5	Sk.	—	0.06	—	0.3
	7	E.	—	0.04	—	0.3
	8	Sk.	—	0.15	—	1.2
	17	S.	+	0.02	—	0.4
Aug.	3	S.	—	0.07	+	0.2
	4	E.	—	0.07	—	0.5
	15	Sk.	—	0.21	+	0.5
Oct.	15	E.	+	0.04	+	0.3
	27	E.	+	0.12	+	0.5
Nov.	4	E.	—	0.11	+	2.0
	12	E.	+	0.01	—	0.7
	27	Sk.	—	0.03	+	1.2
Dec.	22	F.	+	0.07	+	4.3
	29	E.	—	0.03	+	0.3
Mean			—	0.027	+	0.23
Div., Flex., etc.				. .	+	1.21

44 Ophiuchi.

	h.	m.	s.
Right Ascension. . .	17	18	40.578
North-Polar Distance .	114°	3′	23″.13

1874.				s.		″
Mar.	10	S.	—	0.05	+	0.8
May	3	Sk.	—	0.02		. .
Mean			—	0.035		. .
Div., Flex., etc.				. .	+	1.63

β Draconis.

	h.	m.	s.
Right Ascension. . .	17	27	35.127
North-Polar Distance .	37°	36′	16″.85

1874.				s.		″
Nov.	4	E.	—	0.10	—	2.8
	24	E.	+	0.11	—	1.8
Mean			+	0.005	—	2.30
Div., Flex., etc.				. .	+	0.46

α Ophiuchi.

	h.	m.	s.
Right Ascension. . .	17	29	5.135
North-Polar Distance .	77°	20′	46″.55

1874.				s.		″
Jan.	9	S.		0.00		. .
	11	E.	+	0.09	—	1.6

α Ophiuchi—Continued.

1874.				s.		″
Jan.	16	Sk.	+	0.03	—	1.5
May	3	Sk.	+	0.07		. .
July	17	S.	+	0.03	—	1.0
Aug.	4	E.	—	0.03	—	1.3
	15	Sk.	—	0.06		0.0
Oct.	15	E.	—	0.02	—	1.4
	20	F.	+	0.05	—	1.2
	27	E.	+	0.04	+	1.5
Nov.	12	E.	—	0.04	+	0.3
	14	S.	+	0.07	—	0.6
	24	E.	—	0.03	+	1.1
Dec.	29	E.	+	0.02	—	0.1
Mean			+	0.016	—	0.48
Div., Flex., etc.				. .	+	1.23

ω Draconis (Ref.).

	h.	m.	s.
Right Ascension. . .	17	37	41.476
North-Polar Distance .	21°	11′	4″.39

1874.		s.	″
June 24	Sk.	. .	— 3.0
Div., Flex., etc.		. .	+ 0.51

ω Draconis, S. P.

	h.	m.	s.
Right Ascension. . .	17	37	41.476
North-Polar Distance .	338°	48′	55″.61

1874.				s.		″
Feb.	10	E.	—	0.17	+	2.2
Dec.	22	E.	—	0.26	—	1.0
Mean			—	0.215	+	0.60
Div., Flex., etc.				. .	+	0.84

μ Herculis.

	h.	m.	s.
Right Ascension. . .	17	41	31.667
North-Polar Distance .	62°	12′	13″.99

1874.				s.		″
Jan.	11	E.	+	0.08	—	0.7
	14	Sk.	+	0.03	+	0.1
	16	Sk.	—	0.13	+	0.2
	25	S.	+	0.08	+	0.7
July	17	S.	—	0.04	—	1.4
Aug.	19	Sk.	+	0.01	+	0.1
Oct.	20	F.		0.00	—	1.6
Nov.	12	E.	—	0.03	—	0.1
	24	E.	—	0.03	+	1.0
	25	F.	—	0.01	+	1.2
	27	Sk.	—	0.02	+	2.2
Dec.	29	E.		0.00	+	1.4
Mean			—	0.005	+	0.26
Div., Flex., etc.				. .	+	1.16

ψ¹ Draconis.

	h.	m.	s.
Right Ascension. . .	17	44	10.966
North-Polar Distance .	17°	47′	23″.57

1874.				s.		″
Nov.	24	E.	+	0.05	+	0.5
Div., Flex., etc.				. .	+	0.60

ψ^1 Draconis, S. P.

	h.	m.	s.
Right Ascension. . .	17	44	10.966
North-Polar Distance .	3°	12′	36″.43

1874.			s.		″
Jan.	14	S.	— 0.06	—	2.9
	29	F.	— 0.19	—	1.0
Feb.	10	E.	— 0.35	—	3.4
Dec.	22	E.	— 0.16	—	1.5
Mean			— 0.190	—	2.20
Div., Flex., etc. .			. .	+	0.76

γ Draconis.

	h.	m.	s.
Right Ascension. . .	17	53	40.976
North-Polar Distance .	38°	29′	43″.97

1874.			s.		″
Jan.	14	Sk.	— 0.05	—	0.4
	25	S.	— 0.02	—	0.6
Nov.	24	E.	— 0.02	—	0.3
	25	F.	— 0.18	+	1.4
Mean			— 0.068	+	0.02
Div., Flex., etc. .			. .	+	0.43

γ^2 Sagittarii.

	h.	m.	s.
Right Ascension. . .	17	57	42.872
North-Polar Distance .	120°	25′	23″.29

1874.			s.		″
Mar.	10	S.	— 0.08	—	1.6
June	1	E.	+ 0.05	—	4.5
	22	F.	— 0.07	—	0.6
Aug.	19	Sk.	— 0.05	—	2.2
Mean			— 0.038	—	2.22
Div., Flex., etc. .			. .	+	1.60

μ^1 Sagittarii.

	h.	m.	s.
Right Ascension. . .	18	6	13.684
North-Polar Distance .	111°	5′	21″.53

1874.			s.		″
Mar.	10	S.	— 0.02	—	1.8
June	1	E.	0.00	—	4.6
	22	F.	— 0.07	—	0.6
	24	Sk.	+ 0.08	—	0.5
Mean			— 0.002	—	1.88
Div., Flex., etc. .			. .	+	1.48

δ Ursæ Minoris.

	h.	m.	s.
Right Ascension. . .	18	12	58.735
North-Polar Distance .	3°	23′	33″.76

1874.			s.		″
Jan.	11	E.	— 0.52a	—	3.1
	14	Sk.	. .	—	0.4
	16	Sk.	— 0.14	—	3.4
	19	E.	. .	—	1.3
Mar.	10	S.	— 0.31, 51	—	2.6
June	1	E.	— 1.66a	—	3.5
	17	E.	— 0.25, 51	—	0.9
	18	F.	— 0.37ε, 51		. .
	22	F.	+ 0.27a		. .
	24	Sk.	. .	—	2.1
	29	E.	— 0.08ζ, 51	—	1.4
July	5	E.	— 0.23, 51	—	2.5
	7	E.	— 0.16, 51	—	1.0

δ Ursæ Minoris—Continued.

1874.			s.		″
July	8	Sk.	— 2.13a, 51	—	2.5
	15	E.	+ 0.41, 51	—	0.9
	17	S.	— 0.88, 51	—	2.3
	23	E.	+ 0.13, 51	—	3.3
	30	E.	+ 2.21	—	0.6
Aug.	4	E.	— 0.09ε, 51	—	2.2
	15	Sk.	— 2.07a, 51	—	1.1
Oct.	3	E.	+ 0.20a, λ	—	1.0
Nov.	24	E.	— 0.02a	—	1.4
	25	F.	— 0.57	—	0.5
	27	F.	— 0.01a		. .
	27	Sk.	. .	—	1.7
Dec.	7	F.	. .	—	4.0
	11	F.	— 2.11λ	—	1.6
	18	E.	— 0.08		. .
	21	Sk.	— 0.64a		. .
	29	E.	+ 0.19	—	4.4
Mean			. .	—	1.99
Div., Flex., etc. .			. .	+	0.81

δ Ursæ Minoris, S. P.

	h.	m.	s.
Right Ascension. . .	18	12	58.735
North-Polar Distance .	356°	36′	26″.24

1874.			s.		″
Jan.	14	S.	+ 0.53, 51	—	1.2
	16	E.	. .	—	0.9
	17	Sk.	— 0.52	—	0.5
	24	E.	. .	—	1.8
	28	E.	— 0.03, 51	—	1.3
Feb.	10	E.	— 0.56, 51	—	1.0
	11	S.	+ 0.23, 51	—	0.8
	12	F.	. .	—	0.3
	16	Sk.	+ 1.33, 51	+	1.0
	17	E.	— 0.34, 51	—	1.1
	18	F.	— 0.56, 51	—	0.3
Mar.	14	E.	+ 0.03, 51		. .
July	29	E.	+ 2.59		. .
Sept.	30	F.	— 0.10, 51	+	0.9
Oct.	1	S.	— 0.25a, 51		. .
Dec.	14	E.	— 0.30, 51	+	1.0
	15	F.	— 0.79a, 51	—	0.6
	18	E.	+ 0.23	—	0.1
	22	E.	. .	—	0.4
Mean			. .	—	0.42
Div., Flex., etc. .			. .	+	0.89

η Serpentis.

	h.	m.	s.
Right Ascension. . .	18	14	47.346
North-Polar Distance .	92°	55′	45″.20

1874.			s.		″
Aug.	19	Sk.	+ 0.03	+	0.4
Div., Flex., etc. .			. .	+	1.40

1 Aquilæ.

	h.	m.	s.
Right Ascension. . .	18	28	20.962
North-Polar Distance .	98°	19′	47″.45

1874.			s.		″
Mar.	10	S.	+ 0.09	—	2.2
May	29	F.	+ 0.04	—	0.6
June	1	E.	+ 0.12	—	2.1
	17	E.	+ 0.09	—	0.1
	29	E.	+ 0.14	+	0.9
July	5	E.	+ 0.06	—	0.9
	7	E.	+ 0.11	—	0.3
	8	Sk.	+ 0.10	+	0.3
	23	E.	+ 0.19	+	0.8
	30	E.	+ 0.12	—	1.4

1 Aquilæ—Continued.

1874.			s.		″
Aug.	4	E.	+ 0.12	—	0.6
Oct.	3	E.	+ 0.08	—	0.4
	16	F.	+ 0.04	+	1.1
Nov.	25	F.	. .	—	0.4
Mean			+ 0.100	—	0.42
Div., Flex., etc. .			. .	+	1.23

α Lyræ.

	h.	m.	s.
Right Ascension. . .	18	32	40.338
North-Polar Distance .	51°	19′	56″.49

1874.			s.		″
Jan.	11	E.	+ 0.12	—	1.1
	14	Sk.	+ 0.07	—	0.4
	16	Sk.	— 0.06	—	0.6
	19	E.	— 0.01	—	0.3
	25	S.	— 0.02	—	0.3
	28	F.	+ 0.06	—	0.8
May	29	F.	+ 0.13	—	2.0
June	1	E.	+ 0.20	—	2.3
	17	E.	— 0.07	—	0.4
	18	F.	+ 0.08	—	1.0
	24	Sk.	— 0.05	+	0.1
	29	E.	— 0.07	—	1.8
July	5	E.	+ 0.02	—	0.8
	7	E.	— 0.06	—	0.7
	23	E.	+ 0.07	+	0.3
	30	E.	— 0.04	—	2.2
Aug.	4	E.	— 0.07	—	1.8
	15	Sk.	+ 0.01	—	0.6
	19	Sk.	+ 0.03	—	0.8
	27	Sk.	— 0.11	+	2.8
Sept.	23	S.	+ 0.07		. .
Oct.	3	E.	— 0.05	—	1.2
	16	F.	+ 0.19	+	1.2
Nov.	24	E.	+ 0.08	+	1.1
	25	F.	. .	+	1.0
	27	Sk.	+ 0.02		0.0
Dec.	7	F.	+ 0.04	—	1.5
	11	F.	— 0.05	+	0.5
	18	E.	+ 0.04	—	0.5
	21	Sk.	+ 0.06	—	0.6
Mean			+ 0.022	—	0.51
Div., Flex., etc. .			. .	+	0.56

β Lyræ.

	h.	m.	s.
Right Ascension. . .	18	45	25.669
North-Polar Distance .	56°	46′	56″.19

1874.			s.		″
Jan.	14	Sk.	+ 0.11	—	0.5
	25	S.	— 0.03	—	1.2
June	17	E.	+ 0.01	+	0.8
	28	F.	. .	—	0.8
	29	E.	0.00	+	0.6
July	5	E.	— 0.02	+	0.2
	7	E.	— 0.03	—	0.7
	13	S.	+ 0.08	—	1.3
	23	E.	+ 0.16	+	0.2
	30	E.	+ 0.10	—	0.9
Aug.	4	E.	— 0.13	—	0.8
	15	Sk.	— 0.02	—	0.8
	19	Sk.	+ 0.06	—	0.2
	27	Sk.	+ 0.03	+	1.9
Oct.	3	E.	— 0.03	—	1.1
	16	F.	. .	+	0.1
Nov.	24	E.	+ 0.04	—	0.6
	25	F.	. .	—	1.2
Dec.	11	F.	+ 0.08	+	1.6
	18	E.	— 0.01	+	1.7
	23	F.	— 0.02	+	2.5
Mean			+ 0.021	—	0.02
Div., Flex., etc. .			. .	+	1.12

50 Draconis.

	h.	m.	s.
Right Ascension. . .	18	50	25.520
North-Polar Distance .	14°	42′	57″.95

1874.			s.		″
Oct.	3	E.	+ 0.29	—	0.2
Div., Flex., etc. .			. .	+	0.58

ζ Aquilæ.

	h.	m.	s.
Right Ascension. . .	18	59	37.050
North-Polar Distance .	76°	19′	18″.94

1874.			s.		″
Jan.	19	E.	+ 0.05	+	0.8
May	5	F.	+ 0.14	+	0.4
July	6	Sk.	+ 0.14		0.0
	13	S.	+ 0.22	—	1.2
Aug.	15	Sk.	+ 0.08	—	0.3
	27	Sk.	+ 0.18	+	1.0
Sept.	18	F.	+ 0.10	+	1.4
Oct.	3	E.	+ 0.17	—	0.6
	16	F.	+ 0.07	+	1.0
Nov.	24	E.	+ 0.03	+	3.8
	25	F.	+ 0.12	+	1.4
Dec.	4	S.	+ 0.09	—	1.2
	11	F.	+ 0.11	—	0.1
	18	E.	+ 0.10	+	1.1
	19	F.	+ 0.20		. .
Mean			+ 0.120	—	0.54
Div., Flex., etc. .			. .	+	1.22

ζ Aquilæ (Ref.).

1874.			s.		″
Sept.	23	S.	. .	+	0.6
Div., Flex., etc. .			. .	—	0.74

d Sagittarii.

	h.	m.	s.
Right Ascension. . .	19	10	15.693
North-Polar Distance .	109°	10′	26″.69

1874.			s.		″
June	29	E.	+ 0.09	+	2.9
Div., Flex., etc. .			. .	+	1.34

δ Draconis.

	h.	m.	s.
Right Ascension. . .	19	12	31.240
North-Polar Distance .	22°	33′	36″.94

1874.			s.		″
Feb.	15	Sk.	— 0.35	—	4.5
Nov.	24	E.	+ 0.14	—	1.1
	25	F.	— 0.07	—	0.8
Mean			— 0.093	—	2.13
Div., Flex., etc. .			. .	+	0.82

δ Draconis, S. P.

	h.	m.	s.
Right Ascension. . .	19	12	31.240
North-Polar Distance .	337°	26′	23″.06

1874.			s.		″
Dec.	11	F.	— 0.40	—	1.0
Div., Flex., etc. .			. .	+	0.81

δ Aquilæ.

	h.	m.	s.
Right Ascension. . .	19	19	8.658
North-Polar Distance .	87°	8′	3″.92

1874.			s.		″
Feb.	16	E.	+ 0.06	—	1.5
June	29	E.	0.00	—	1.0
July	5	E.	+ 0.05	—	2.0
	7	E.	+ 0.06	—	0.3
	8	Sk.	+ 0.07	+	0.4
	15	E.	0.00	—	0.8
	17	S.	+ 0.08	—	1.5
Sept.	9	F.	+ 0.10	+	0.7
	18	F.	+ 0.10	—	0.9
	21	E.	+ 0.11	—	2.3
	22	F.	+ 0.13	—	1.4
	24	Sk.	+ 0.10	—	1.0
Oct.	2	Sk.	+ 0.05	—	2.8
	3	E.	+ 0.18	—	2.4
	18	Sk.	+ 0.04	+	0.5
Nov.	25	F.	+ 0.09	—	0.6
Dec.	18	E.	+ 0.05	—	0.7
	23	F.	+ 0.25	+	2.2
Mean			+ 0.084	—	0.86
Div., Flex., etc. .			. .	+	1.43

δ Aquilæ (Ref.).

1874.			s.		″
July	30	E.	. .	+	1.6
Div., Flex., etc. .			. .	—	0.50

κ Aquilæ.

	h.	m.	s.
Right Ascension. . .	19	30	6.693
North-Polar Distance .	97°	18′	18″.86

1874.			s.		″
May	5	F.	. .	+	0.3
June	22	F.	+ 0.09	+	1.0
	29	E.	+ 0.02	+	1.3
July	5	E.	+ 0.11	—	0.9
	6	Sk.	+ 0.12		. .
	7	E.	+ 0.13	+	0.7
	8	Sk.	+ 0.09	+	0.9
Mean			+ 0.093	+	0.55
Div., Flex., etc. .			. .	+	1.30

κ Aquilæ (Ref.).

1874.			s.		″
July	30	E.	+ 0.10	+	4.6r

γ Aquilæ.

	h.	m.	s.
Right Ascension. . .	19	40	16.144
North-Polar Distance .	79°	41′	31″.45

1874.			s.		″
Jan.	28	F.	+ 0.08	—	0.4
Feb.	9	E.	— 0.01	—	0.3
	11	F.	0.00	—	1.1
	16	E.	— 0.04	—	1.9
April	10	E.	+ 0.03	—	0.2
May	5	F.	0.00	—	1.5
June	28	F.	+ 0.14		. .
	29	E.	— 0.22	+	1.5
July	7	E.	+ 0.02	+	0.2
	15	E.	— 0.01	—	1.3
	17	S.	+ 0.05	—	1.4
Aug.	19	Sk.	— 0.10		0.0
Sept.	9	F.	+ 0.10	+	1.6
	22	F.	— 0.02	+	2.0
	24	Sk.	+ 0.01	—	3.4

γ Aquilæ—Continued.

1874.			s.		″
Oct.	2	Sk.	+ 0.07	—	0.3
	3	E.	+ 0.02	+	0.8
	10	Sk.	+ 0.06	—	0.8
	18	Sk.	+ 0.04	—	0.3
Dec.	4	S.	+ 0.02	+	0.5
	8	S.	+ 0.01	+	0.3
	15	F.	+ 0.17	+	0.5
	18	E.	— 0.08	+	1.7
	19	F.	+ 0.08	—	0.8
	21	Sk.	+ 0.05	+	0.3
Mean			+ 0.019	—	0.18
Div., Flex., etc. .			. .	+	1.27

γ Aquilæ (Ref.).

1874.			s.		″
July	30	E.	+ 0.08	+	1.4
Div., Flex., etc. .			. .	—	0.74

α Aquilæ.

	h.	m.	s.
Right Ascension. . .	19	44	38.100
North-Polar Distance .	81°	27′	45″.76

1874.			s.		″
Feb.	3	Sk.	+ 0.12	+	0.9
	9	E.	. .	—	0.3
	11	F.	+ 0.03	—	4.7
	16	E.	. .	—	1.6
April	10	E.	— 0.02	—	1.7
May	5	F.	+ 0.04	—	1.6
June	28	F.	+ 0.15	—	0.1
	29	E.	+ 0.06	—	0.9
July	15	E.	. .	+	1.1
	17	S.	+ 0.08	—	2.5
Aug.	19	Sk.	+ 0.04	—	0.5
Sept.	9	F.	+ 0.04	—	0.4
	18	F.	+ 0.04	—	0.1
	21	E.	0.00	—	2.7
	22	F.	0.00	—	1.3
	24	Sk.	+ 0.08	+	0.2
Oct.	3	E.	+ 0.05	—	1.5
	18	Sk.	+ 0.07	—	0.1
Dec.	4	S.	+ 0.05	—	0.8
	8	S.	+ 0.04	+	0.4
	15	F.	. .	—	0.3
	18	E.	— 0.06	+	1.4
	19	F.	. .	—	0.8
	21	Sk.	+ 0.02	+	0.3
	23	F.	+ 0.06	+	3.7
Mean			+ 0.044	—	0.56
Div., Flex., etc. .			. .	+	1.32

ε Draconis.

	h.	m.	s.
Right Ascension. . .	19	48	35.271
North-Polar Distance .	20°	3′	12″.17

1874.			s.		″
April	10	E.	+ 0.20	—	2.3
Div., Flex., etc. .			. .	+	0.64

β Aquilæ.

	h.	m.	s.
Right Ascension. . .	19	49	7.403
North-Polar Distance .	83°	54′	22″.23

1874.			s.		″
June	28	F.	+ 0.01	—	0.4
July	5	E.	+ 0.03	—	0.5
	7	E.	+ 0.14	—	0.2
	15	E.	— 0.04	—	0.3
Sept.	21	E.	+ 0.03	+	1.2
Dec.	19	F.	+ 0.13	—	0.8
	23	F.	+ 0.11	+	2.8
Mean			+ 0.059	+	0.26
Div., Flex., etc. .			. .	+	1.44

λ Ursæ Minoris.

	h.	m.	s.
Right Ascension. . .	19	50	18.244
North-Polar Distance .	1°	4′	18″.34

1874.				s.		″
May	6	S.	+	3.85*a*		. .
	7	Sk.	+	1.73*a*	—	1.8
June	28	F.	—	1.16, 51	—	1.4
	29	E.	+	1.62*d*, 51	—	1.2
Sept.	9	F.	—	2.92*a*	—	1.0
	18	F.	+	1.52*a*	—	1.0
	21	E.	+	0.33*a*	—	2.0
	22	F.	—	1.65*a*	—	2.5
	24	Sk.	—	3.27*a*	—	1.1
	25	E.	—	2.47	—	2.4
	26	F.	—	0.31	—	2.3
Oct.	2	Sk.	+	7.82*a*, 51	+	0.1
	3	E.	+	1.41*a*, *d*	—	1.0
	10	Sk.		. .	—	0.4
	16	F.		. .	—	2.2
	18	Sk.		. .	—	1.2
	20	F.	+	0.28	+	1.8
Mean				. .	—	1.22
Div., Flex., etc. .				. .	+	0.77

λ Ursæ Minoris, S. P.

	h.	m.	s.
Right Ascension. . .	19	50	18.244
North-Polar Distance .	358°	55′	41″.66

1874.				s.		″
Feb.	28	Sk.		. .	—	0.1
Mar.	1	E.		. .	—	0.1
	2	F.	—	5.22*a*		. .
	9	E.		. .	+	1.0
	10	F.		. .	+	0.4
	11	E.		. .	+	0.5
	13	E.		. .	—	1.2
	14	Sk.	—	1.65*a*	+	0.3
	19	E.		. .	—	2.7
	21	E.		. .	+	0.6
	24	Sk.	+	4.67, 51	+	1.1
	28	Sk.	—	5.78*a*	—	0.1
	29	E		. .	—	1.1
Oct.	28	F.	—	2.83, 51	—	1.5
Dec.	11	F.	—	6.92*d*	—	2.9
	23	F.		. .	—	0.5
Mean				. .	—	0.42
Div., Flex., etc. .				. .	+	0.81

τ Aquilæ.

	h.	m.	s.
Right Ascension. . .	19	57	59.066
North-Polar Distance .	83°	4′	33″.00

1874.				s.		″
May	6	S.	+	0.01		. .
Sept.	26	F.	—	0.05	+	1.5
Oct.	20	F.	—	0.09	+	0.6
Mean			+	0.050	+	1.05
Div., Flex., etc. .				. .	+	1.39

a^2 Capricorni.

	h.	m.	s.
Right Ascension. . .	20	11	3.702
North-Polar Distance .	102°	56′	0″.58

1874.				s.		″
May	6	S.	+	0.05		. .
	7	Sk.	+	0.05	—	1.4
Mean			+	0.050		. .
Div, Flex., etc. .				. .	+	1.29

κ Cephei.

	h.	m.	s.
Right Ascension. . .	20	13	5.532
North-Polar Distance .	12°	40′	9″.85

1874.				s.		″
Oct.	16	F.	+	0.20	—	2.7
Dec.	15	F.	—	0.26	—	1.7
Mean			—	0.030	—	2.20
Div., Flex., etc. .				. .	+	0.61

κ Cephei, S. P.

	h.	m.	s.
Right Ascension. . .	20	13	5.532
North-Polar Distance .	347°	19′	50″.15

1874.				s.		″
Feb.	27	S.	+	0.24	—	1.0
Mar.	24	Sk.	+	0.31	+	0.7
Mean			+	0.275	—	0.15
Div., Flex., etc. .				. .	+	0.75

κ Cephei (Ref.).

1874.			s.		″
Aug.	19	Sk.	. .	—	4.2
Div., Flex., etc. .			. .	+	0.44

π Capricorni.

	h.	m.	s.
Right Ascension. . .	20	20	6.423
North-Polar Distance .	108°	37′	21″.91

1874.				s.		″
Sept.	22	F.	—	0.01	+	2.0
	26	F.	+	0.04	—	0.2
Oct.	3	E.	—	0.01	—	0.9
	16	F.	—	0.05	—	1.7
	20	F.	+	0.04	+	0.8
Nov.	4	E.	+	0.09	—	0.7
Mean			+	0.017	—	0.12
Div., Flex., etc. .				. .	+	1.33

ε Delphini.

	h.	m.	s.
Right Ascension. . .	20	27	11.555
North-Polar Distance .	79°	7′	24″.39

1874.				s.		″
May	5	F.		0.00		. .
	7	Sk.	+	0.09	—	2.9
Oct.	16	F.	+	0.15	—	3.0
	20	F.		. .	+	0.5
Nov.	4	E.	+	0.09	—	1.2
Dec.	11	F.	—	0.02	+	1.3
Mean			+	0.062	—	1.06
Div., Flex., etc. .				. .	+	1.26

ε Delphini (Ref.).

1874.			s.		″
Aug.	19	Sk.	. .	+	2.6
Div., Flex., etc. .			. .	—	0.76

Groombridge 3241.

	h.	m.	s.
Right Ascension. . .	20	30	32.099
North-Polar Distance .	17°	53′	42″.90

1874.				s.		″
Oct.	13	S.	—	0.10	+	1.6
	16	F.	+	0.48	+	1.5
	20	F.		. .	—	0.6
Mean			+	0.190	+	0.83
Div., Flex., etc. .				. .	+	0.60

Groombridge 3241, S P.

	h.	m.	s.
Right Ascension. . .	20	30	32.099
North-Polar Distance .	342°	6′	17″.10

1874.				s.		′
Mar.	24	Sk.	+	0.31	+	0.9
	28	Sk.	+	1.49	+	0.6
Mean			+	0.900	+	0.75
Div., Flex., etc. .				. .	+	0.76

α Cygni.

	h.	m.	s.
Right Ascension. . .	20	37	8.192
North-Polar Distance .	45°	10′	8″.52

1874.				s.		″
Jan.	19	E.	+	0.05	—	0.7
Feb.	3	Sk.	—	0.03	+	0.3
	9	E.	—	0.13	—	0.2
	16	E.	—	0.05	—	2.0
April	10	E.	+	0.05	—	1.5
May	8	E.	—	0.20	—	1.3
Sept.	9	F.		. .	+	0.3
	21	E.	—	0.06	—	0.1
	25	E.	+	0.03	—	1.1
	26	F.		. .	—	1.7
Oct.	15	E.	+	0.17	—	0.2
	18	Sk.	+	0.02	—	1.2
	19	E.	+	0.01	—	0.4
	20	F.		. .	—	0.5
	28	F.	+	0.05	—	2.1
Mean			—	0.008	—	0.83
Div., Flex , etc. .				. .	+	0.30

α Cygni (Ref.).

1874.			s.		″
Aug.	19	Sk.	. .	—	2.9
Div., Flex , etc. .			. .	+	0.69

μ Aquarii.

	h.	m.	s.
Right Ascension. . .	20	45	51.336
North-Polar Distance .	99°	27′	15″.35

1874.				s.		″
Oct.	3	E.	+	0.13	—	0.8
	13	S.	+	0.10	+	1.2
Mean			+	0.115	+	0.20
Div., Flex., etc. .				. .	+	1.19

ν Cygni.

	h.	m.	s.
Right Ascension. . .	20	52	28.548
North-Polar Distance .	49°	18′	59″.89

1874.				s.		′
Oct.	19	E.	+	0.13		. .
	20	F.		. .	+	2.9
	29	S	+	0.11	+	1.4
Nov.	4	E.	+	0.06	+	0.5
	12	E.	+	0.23	+	1.7
Mean			+	0.132	+	1.62
Div., Flex , etc. .				. .	+	0.32

12-Year Cat. 1879.

Right Ascension . . . 20h 53m 14.063s

North-Polar Distance . 9° 55′ 18.″19

1874.			s.		″
Sept.	22	F.	− 0.03	−	0.7
Oct.	13	S.	− 0.48	−	1.4
	16	F.	. .	−	1.8
Mean			− 0.255	−	1.30
Div., Flex., etc. .			. .	+	0.53

12-Year Cat. 1879, S. P.

Right Ascension . . . 20h 53m 14.063s

North-Polar Distance . 350° 4′ 41.″81

1874.			s.		″
Feb.	27	S.	− 0.33	−	1.1
Mar.	9	E.	+ 0.39	−	0.1
Dec.	15	F.	− 0.72	+	0.9
Mean			− 0.220	−	0.10
Div., Flex., etc. .			. .	+	0.77

61¹ Cygni.

Right Ascension . . . 21h 1m 15.046s

North-Polar Distance . 51° 52′ 8.″24

1874.			s.		″
Oct.	5	S.	− 0.01	−	1.6
	13	S.	− 0.08	+	1.3
	15	E.	+ 0.05	+	0.2
	19	E.	+ 0.02	+	1.2
Nov.	4	E.	− 0.09	−	0.9
	12	E.	+ 0.14	+	1.4
	14	S.	− 0.02	−	0.3
Mean			+ 0.001	+	0.19
Div., Flex., etc. .			. .	+	0.64

ζ Cygni.

Right Ascension . . . 21h 7m 34.428s

North-Polar Distance . 60° 17′ 19.″60

1874.			s.		″
Jan.	17	Sk.	+ 0.13	−	1.1
	20	E.	− 0.06	+	0.3
Feb.	15	Sk.	+ 0.11	−	1.2
	16	E.	0.00	−	0.5
Mar.	1	F.	+ 0.06	−	0.1
April	10	E.	+ 0.02	+	0.4
May	8	E.	− 0.04	−	0.5
Sept.	21	E.	− 0.06	−	3.0
	22	F.	+ 0.11	−	0.5
	25	E.	+ 0.07	−	0.3
	26	F.	+ 0.10	+	0.7
Oct.	5	S.	+ 0.05	−	1.9
	15	E.	− 0.01	+	0.2
	16	F.	+ 0.05	−	1.4
	18	Sk.	+ 0.03	+	0.4
	19	E.	+ 0.01	+	0.4
	20	F.	+ 0.11	+	0.6
	28	F.	− 0.02	+	0.1
	29	S.	+ 0.12	−	0.6
Nov.	4	E.	− 0.07	−	0.8
	6	S.	+ 0.21	−	1.6
	12	E.	+ 0.11	+	0.2
Mean			+ 0.047	−	0.46
Div., Flex., etc. .			. .	+	1.14

α Cephei.

Right Ascension . . . 21h 15m 34.265s

North-Polar Distance . 27° 56′ 53.″57

1874.			s.		″
Jan.	17	Sk.	− 0.08	−	2.0
Mar.	1	F.	− 0.27	−	2.1
May	8	E.	− 0.28	−	3.5
Sept.	9	F.	+ 0.15	−	3.5
	25	E.	. .	−	2.9
	26	F.	+ 0.14	−	3.9
Oct.	16	F.	+ 0.21	−	3.8
	20	F.	+ 0.12	−	2.6
	29	S.	− 0.09	+	0.9
Nov.	4	E.	− 0.03	−	5.1
	6	S.	+ 0.15	−	2.4
Mean			+ 0.002	−	2.81
Div., Flex., etc. .			. .	+	0.74

α Cephei (Ref.).

1874.			s.		″
Sept.	22	F.	− 0.38	−	4.9
Oct.	13	S.	. .	−	2.7
	17	S.	. .	+	2.0
	28	F.	. .	−	3.0
Nov.	14	S.	. .	+	2.7
Mean			. .	−	2.26
Div., Flex., etc. .			. .	+	0.60

1 Pegasi.

Right Ascension . . . 21h 16m 15.635s

North-Polar Distance . 70° 43′ 59.″25

1874.			s.		″
Sept.	25	E.	. .	−	2.9
Oct.	5	S.	− 0.04	−	0.3
	16	F.	0.00	−	1.2
	20	F.	− 0.02	+	1.0
	29	S.	− 0.09	−	0.8
Nov.	12	E.	+ 0.03	+	0.2
Mean			− 0.024	−	0.67
Div., Flex., etc. .			. .	+	1.25

β Aquarii.

Right Ascension . . . 21h 24m 55.490s

North-Polar Distance . 96° 7′ 26.″33

1874.			s.		″
Jan.	17	Sk.	+ 0.01	−	1.5
July	30	E.	+ 0.06	+	0.8
Sept.	21	E.	+ 0.09	−	1.8
	22	F.	+ 0.02		. .
	25	E.	+ 0.15	+	0.2
	26	F.	+ 0.10		. .
Oct.	2	Sk.	+ 0.06	−	1.1
	13	S.	+ 0.12	−	0.9
	14	Sk.	+ 0.05	+	0.8
	15	E.	+ 0.01	+	0.7
	16	F.	− 0.03	−	1.3
	18	Sk.	+ 0.02	+	0.2
	19	E.	+ 0.07	−	0.9
	20	F.	+ 0.06	+	0.6
	22	Sk.	+ 0.04		. .
	28	F.	− 0.06	+	0.1
	29	S.	+ 0.08	−	0.5
Nov.	4	E.	+ 0.02	−	1.7
	6	S.	+ 0.05	−	0.5
	12	E.	+ 0.05	−	1.0
	16	E.	+ 0.11	+	0.8
Mean			− 0.051	−	0.39
Div., Flex , etc. .			. .	+	1.37

β Cephei.

Right Ascension . . . 21h 27m 1.559s

North-Polar Distance . 19° 59′ 33.″08

1874.			s.		″
Oct.	16	F.	. .	−	1.8
Nov.	14	S.	+ 0.17	−	3.2
Mean			+ . .	−	2.50
Div., Flex., etc. .			. .	+	0.64

β Cephei, S. P.

Right Ascension . . . 21h 27m 1.559s

North-Polar Distance . 340° 0′ 26.″92

1874.			s.		″
April	4	S.	+ 0.07	+	0.9
Div., Flex., etc. .			. .	+	0.83

β Cephei (Ref.).

1874.			s.		″
Oct.	5	S.	. .	−	1.4
Div., Flex., etc. .			. .	+	0.46

ξ Aquarii.

Right Ascension . . . 21h 31m 2.560s

North-Polar Distance . 98° 25′ 4.″42

1874.			s.		″
Oct.	16	F.	− 0.02	−	3.6
	17	S.	. .	−	1.7
	28	F.	− 0.11	−	1.3
	29	S.	+ 0.06	−	2.1
Nov.	6	S.	+ 0.03	−	2.5
Mean			− 0.010	−	2.24
Div., Flex., etc. .			. .	+	1.22

ε Pegasi.

Right Ascension . . . 21h 37m 59.871s

North-Polar Distance . 80° 42′ 5.″30

1874.			s.		″
Jan.	17	Sk.	+ 0.03	+	1.6
	29	F.	+ 0.12	+	0.5
Mar.	1	F.	− 0.03	−	0.9
	3	Sk.	− 0.09	−	1.3
May	8	E.	+ 0.01		. .
July	30	E.	+ 0.01	−	1.2
Sept.	22	F.	0.00	+	0.8
Oct.	2	Sk.	0.00	−	0.9
	13	S.	− 0.03	+	0.2
	14	Sk.	+ 0.02	+	0.7
	15	E.	+ 0.05	+	0.9
	17	S.	. .	−	1.4
	19	E.	− 0.04	−	1.4
Nov.	6	S.	+ 0.04	−	1.4
	14	S.	− 0.10	−	1.1
	16	E.	− 0.01	−	0.2
Mean			− 0.001	−	0.34
Div., Flex., etc. .			. .	+	1.29

ε Pegasi (Ref.).

1874.			s.		″
Oct.	29	S.	. .	+	1.9
Div., Flex., etc. .			. .	−	0.68

11 Cephei.

	h.	m.	s.
Right Ascension. . .	21	40	4.175
North-Polar Distance .	19°	16′	7″.46

1874.			s.		″
Oct. 28	F.		. .	—	2.2
Div., Flex., etc. .			. .	+	0.61

11 Cephei (Ref.).

1874.			s.		″
Nov. 4	E.	—	0.25	—	0.2
Div., Flex., etc. .			. .	+	0.43

μ Capricorni.

	h.	m.	s.
Right Ascension. . .	21	46	25.494
North-Polar Distance .	104°	8′	35″.91

1874.			s.		″
Sept. 25	E.	+	0.06	+	0.5
26	F.		0.00	+	1.2
Oct. 13	S.	+	0.10		. .
15	E.	+	0.02	+	1.6
16	F.	—	0.08	—	0.3
19	E.		0.00	+	1.4
20	F.	+	0.12	+	1.1
Nov. 4	E.	—	0.01		0.0
12	E.	+	0.01	+	1.7
Mean		+	0.024	+	0.90
Div., Flex., etc. .			. .	+	1.28

79 Draconis.

	h.	m.	s.
Right Ascension. . .	21	51	17.914
North-Polar Distance .	16°	53′	37″.75

1874.			s.		″
Sept. 25	E.	+	0.38	—	1.5
26	F.	+	0.05	—	1.9
Oct. 5	S.	+	0.30	—	1.4
15	E.	+	0.45	—	1.0
16	F.	+	0.34	—	2.5
20	F.	+	0.16	—	0.1
Nov. 4	E.	+	0.10	—	2.9
12	E.	+	0.01	+	1.7
Mean		+	0.224	—	1.20
Div., Flex., etc. .			. .	+	0.60

79 Draconis, S. P.

	h.	m.	s.
Right Ascension. . .	21	51	17.914
North-Polar Distance .	343°	6′	22″.25

1874.			s.		″
Feb. 27	S.	—	0.07	—	0.5
Mar. 30	F.	+	0.32	+	0.7
April 27	E.	—	0.54	—	1.0
29	E.	+	0.10	+	0.3
Dec. 24	S.	—	0.24	+	1.7
Mean		—	0.086	+	0.24
Div., Flex., etc. .			. .	+	0.76

79 Draconis (Ref.).

1874.			s.		″
Oct. 17	S.		. .		0.0
Nov. 6	S.		. .	+	2.2
14	S.		. .	—	1.6
Mean			. .	+	0.20
Div., Flex., etc. .			. .	+	0.36

α Aquarii.

	h.	m.	s.
Right Ascension. . .	21	59	18.696
North-Polar Distance .	90°	55′	51″.33

1874.			s.		″
Jan. 17	Sk.	+	0.10	—	0.1
Feb. 4	Sk.	+	0.08	+	1.2
July 30	E.	+	0.13	—	0.4
Sept. 26	F.	+	0.02	—	0.5
Oct. 2	Sk.	+	0.10	—	2.7
14	Sk.		0.00	—	1.1
15	E.	+	0.16		0.0
16	F.	+	0.02	—	1.5
19	E.	+	0.05	—	1.2
20	F.	—	0.01	+	1.7
Nov. 4	E.	+	0.08	—	2.7
12	E.	+	0.04	—	0.1
14	S.	+	0.06	—	1.2
16	E.	+	0.07	—	0.7
Mean		+	0.064	—	0.66
Div., Flex., etc. .			. .	+	1.36

α Aquarii (Ref.).

1874.			s.		″
Sept. 18	F.		. .	+	1.9
25	E.	+	0.11	+	2.0
Oct. 5	S.		. .	+	1.1
Mean			. .	+	1.63
Div., Flex., etc. .			. .	—	0.48

θ Aquarii (Ref.).

	h.	m.	s.
Right Ascension. . .	22	10	11.020
North-Polar Distance .	98°	24′	34″.85

1874.			s.		″
Aug. 27	Sk.		. .	—	1.9
Div., Flex., etc. .			. .	—	0.72

π Aquarii.

	h.	m.	s.
Right Ascension. . .	22	18	50.505
North-Polar Distance .	89°	15′	40″.03

1874.			s.		″
Oct. 16	F.	+	0.15	—	1.7
20	F.	—	0.01	—	0.3
Nov. 12	E.	—	0.03	—	1.0
16	E.	+	0.06	—	1.8
Mean		+	0.042	—	1.20
Div., Flex., etc. .			. .	+	1.37

π Aquarii (Ref.).

1874.			s.		″
Aug. 27	Sk.		. .	—	1.9
Sept. 9	F.	+	0.14		0.0
18	F.		. .	+	1.7
Mean			. .	—	0.07
Div., Flex., etc. .			. .	—	0.51

η Aquarii.

	h.	m.	s.
Right Ascension. . .	22	28	52.854
North-Polar Distance .	90°	45′	57″.96

1874.			s.		″
Nov. 4	E.	+	0.13	—	1.5
12	E.	—	0.01	—	0.1
16	E.	+	0.08	—	1.5
Mean		+	0.067	—	1.03
Div., Flex., etc. .			. .	+	1.36

η Aquarii (Ref.).

1874.			s.		″
Aug. 27	Sk.		. .	—	0.7
Sept. 18	F.	—	0.05	+	1.9
Mean			. .	+	0.60
Div., Flex., etc. .			. .	—	0.49

226 Cephei.

	h.	m.	s.
Right Ascension. . .	22	30	3.259
North-Polar Distance .	14°	25′	22″.62

1874.			s.		″
Nov. 14	S.	—	0.38	—	1.1
16	E.	+	0.18	+	0.2
Mean		—	0.100	—	0.45
Div., Flex., etc. .			. .	+	0.59

226 Cephei, S. P.

	h.	m.	s.
Right Ascension. . .	22	30	3.259
North-Polar Distance .	345°	34′	37″.38

1874.			s.		″
May 3	E.	—	0.34	+	0.6
Div., Flex., etc. .			. .	+	0.74

ζ Pegasi.

	h.	m.	s.
Right Ascension. . .	22	35	10.625
North-Polar Distance .	79°	49′	31″.74

1874.			s.		″
Jan. 15	Sk.	+	0.21	—	1.3
17	Sk.	+	0.21	+	0.1
Feb. 4	Sk.	+	0.06	+	1.7
Sept. 9	F.	—	0.02	—	0.5
18	F.	+	0.06	—	1.0
22	F.	+	0.14	—	0.5
Oct. 19	E.		0.00	—	0.3
Nov. 4	E.	+	0.24	—	0.5
12	E.	+	0.08	+	0.7
16	E.	+	0.05	—	0.1
Dec. 14	E.	+	0.03	+	1.3
Mean		+	0.096	—	0.04
Div., Flex., etc. .			. .	+	1.27

ι Cephei.

	h.	m.	s.
Right Ascension. . .	22	45	11.879
North-Polar Distance .	24°	27′	43″.53

1874.			s.		″
Sept. 26	F.	+	0.20	—	3.3
Nov. 14	S.	+	0.06	—	0.5
16	E.	+	0.30	—	0.2
Mean		+	0.187	—	1.33
Div., Flex., etc. .			. .	+	0.84

ι Cephei (Ref.).

1874.			s.		″
Sept. 9	F.	+	0.16	—	0.2
18	F.	—	0.33	—	1.6
Mean		—	0.085	—	0.90
Div., Flex., etc. .			. .	+	0.57

λ Aquarii.

Right Ascension . . 22 h. 46 m. 2.346 s.

North-Polar Distance . 98° 14′ 57.″19

1874.			s.		″
Sept.	22	F.	+ 0.14	−	0.4
Oct.	19	E.	+ 0.09	−	0.1
Nov.	16	E.	+ 0.04	−	0.9
Mean			+ 0.090	−	0.47
Div., Flex., etc. .			. .	+	1.24

α Piscis Australis.

Right Ascension . . 22 h. 50 m. 41.048 s.

North-Polar Distance . 120° 17′ 21.″21

1874.			s.		″
April	10	F.	. .	−	1.8
July	30	E.	+ 0.09	−	0.7
Aug.	27	Sk.	+ 0.06	−	0.4
Sept.	9	F.	− 0.01	−	0.9
	18	F.	+ 0.03	−	0.4
	22	F.	− 0.04	+	0.4
	23	S.	+ 0.05	+	0.1
	26	F.	+ 0.05	+	1.1
Oct.	19	E.	+ 0.10	−	0.2
	20	F.	+ 0.07	+	1.3
Nov.	3	Sk.	+ 0.12		0.0
	14	S.	+ 0.03	−	1.0
Mean			+ 0.050	−	0.21
Div., Flex., etc. .			. .	+	1.60

α Pegasi.

Right Ascension . . 22 h. 58 m. 29.119 s.

North-Polar Distance . 75° 28′ 19.″02

1874.			s.		″
Feb.	4	Sk.	− 0.04	+	2.6
	10	E.	− 0.06	+	0.9
	16	Sk.	+ 0.04	+	2.3
	17	E.	− 0.06		0.0
April	10	F.	− 0.02	+	2.7
Aug.	27	Sk.	+ 0.02	+	0.6
Sept.	9	F.	. .	+	1.5
	18	F.	+ 0.01	−	0.4
	22	F.	+ 0.05	+	1.4
	23	S.	− 0.04	−	0.3
	26	F.	+ 0.02	+	1.3
Oct.	10	E.	− 0.01	−	0.9
	19	E.	+ 0.01	+	0.5
	20	F.	+ 0.03	+	0.1
Nov.	3	Sk.	− 0.06	−	0.7
Mean			− 0.008	+	0.77
Div., Flex., etc. .			. .	+	1.21

o Cephei.

Right Ascension . . 23 h. 13 m. 27.612 s.

North-Polar Distance . 22° 34′ 40.″97

1874.			s.		″
Sept.	22	F.	+ 0.13	−	3.5
	26	F.	+ 0.09	−	3.2

o Cephei—Continued.

1874.			s.		″
Oct.	10	E.	− 0.33	−	3.7
	16	F.	. .	−	2.7
	20	F.	+ 0.22	−	2.7
Mean			+ 0.028	−	3.16
Div., Flex., etc. .			. .	+	0.82

o Cephei, S. P.

Right Ascension . . 23 h. 13 m. 27.612 s.

North-Polar Distance . 337° 25′ 19.″03

1874.			s.		″
Dec.	31	F.	. .	+	3.3
Div., Flex., etc. .			. .	+	0.81

θ Piscium.

Right Ascension . . 23 h. 21 m. 34.580 s.

North-Polar Distance . 84° 18′ 45.″08

1874.			s.		″
Oct.	10	E.	0.00	−	0.4
Div., Flex., etc. .			. .	+	1.44

ι Piscium.

Right Ascension . . 23 h. 33 m. 28.243 s.

North-Polar Distance . 85° 3′ 22.″61

1874.			s.		″
Sept.	25	E.	+ 0.05	−	0.8
Oct.	10	E.	+ 0.01	−	0.9
	20	F.	− 0.04	+	1.9
Mean			+ 0.007	+	0.07
Div., Flex., etc. .			. .	+	1.45

γ Cephei.

Right Ascension . . 23 h. 34 m. 11.407 s.

North-Polar Distance . 13° 4′ 14.″93

1874.			s.		″
Oct.	16	F.	+ 0.58	−	1.0
	20	F.	+ 0.15	+	1.0
Mean			+ 0.365		0.00
Div., Flex., etc. .			. .	+	0.61

γ Cephei, S. P.

Right Ascension . . 23 h. 34 m. 11.407 s.

North-Polar Distance . 346° 55′ 45.″07

1874.			s.		″
Feb.	27	S.	+ 0.80	−	1.6
May	5	Ha.	− 0.45		. .
	11	Ha.	− 0.38		. .
	21	F.	. .	−	0.1

γ Cephei, S. P.—Continued.

1874.			s.		″
May	24	E.	+ 0.45	+	4.3
Oct.	2	E.	+ 0.42	−	0.4
Mean			+ 0.168	+	0.55
Div., Flex., etc. .			. .	+	0.75

γ Cephei (Ref.).

1874.			s.		″
Oct.	23	E.	+ 0.59	+	0.1
Nov.	7	Sk.	. .		0.0
Mean			. .	+	0.05
Div., Flex., etc. .			. .	+	0.44

Groombridge 4163.

Right Ascension . . 23 h. 48 m. 43.475 s.

North-Polar Distance . 16° 17′ 27.″72

1874.			s.		″
Sept.	26	F.	− 0.19	−	1.8
Oct.	12	F.	− 0.06	+	2.0
	16	F.	− 0.27	−	1.4
	20	F.	+ 0.04	−	0.6
	23	E.	+ 0.50	−	1.3
Mean			+ 0.004	−	0.62
Div., Flex., etc. .			. .	+	0.59

Groombridge 4163, S. P.

Right Ascension . . 23 h. 48 m. 43.475 s.

North Polar Distance . 343° 42′ 32.″28

1874.			s.		″
May	9	F.	. .	+	1.1
	11	E.	− 0.38	+	3.2
Mean			. .	+	2.15
Div., Flex., etc. .			. .	+	0.75

ω Piscium.

Right Ascension . . 23 h. 52 m. 50.518 s.

North-Polar Distance . 83° 50′ 2.″60

1874.			s.		″
Oct.	10	E.	+ 0.03	−	1.6
	15	E.	. .	−	1.6
Nov.	4	E.	+ 0.04	−	1.2
Dec.	15	F.	− 0.02	+	0.2
Mean			+ 0.017	−	1.30
Div., Flex., etc. .			. .	+	1.43

ω Piscium (Ref.).

1874.			s.		″
Nov.	7	Sk.	+ 0.01	+	1.0
Div., Flex., etc. .			. .	−	0.51

MEAN DECLINATIONS OF STARS

FOR 1874.0,

GIVEN BY INDIVIDUAL OBSERVATIONS

WITH THE

MURAL CIRCLE,

1874.

MEAN DECLINATIONS OF STARS FOR 1874.0.

MURAL CIRCLE.

LACAILLE 9723, $0^h\ 0^m\ 16^s$.

1874.		° ′ ″
November 14		−36 47 5.7
25		6.1

LACAILLE 9739, $0^h\ 2^m\ 28^s$.

November 26	−35 29	46.1
December 5		47.5

LALANDE 17, $0^h\ 4^m\ 16^s$.

October 17	+36 46	20.8
November 16		20.6

LALANDE 26, $0^h\ 4^m\ 25^s$.

October 26	+39 3	46.1
November 25		49.4

LACAILLE 9753, $0^h\ 4^m\ 26^s$.

November 7	−35 33	44.6
12		42.9

LALANDE 65, $0^h\ 5^m\ 36^s$.

October 23	+38 20	19.0

LALANDE 89, $0^h\ 6^m\ 20^s$.

November 6	+36 59	33.9
21		33.4

WEISSE 90, $0^h\ 6^m\ 40^s$.

December 4	+ 2 41	28.9

(*), $0^h\ 7^m\ 30^s$.

December 15	+ 2 41	39.7

B. A. C. 37, $0^h\ 8^m\ 40^s$.

November 3	−35 36	18.1

LALANDE 201, $0^h\ 9^m\ 13^s$.

December 2	+38 19	13.9
18		12.4

LALANDE 202, $0^h\ 9^m\ 29^s$.

November 26	+38 3	33.8

LALANDE 220, $0^h\ 10^m\ 11^s$.

1874.		° ′ ″
November 7	+35 47	20.3

B. A. C. 47, $0^h\ 10^m\ 15^s$.

December 8	+ 1 9	1.1

(* 9.0), $0^h\ 10^m\ 18^s$.

November 12	+37 31	12.5

LALANDE 231, $0^h\ 10^m\ 21^s$.

December 19	+39 6	1.8

WEISSE (2) 256, $0^h\ 10^m\ 35^s$

October 17	+35 51	26.5

LALANDE 251, $0^h\ 11^m\ 0^s$.

October 17	+35 51	4.3
November 7		0.8

σ ANDROMEDÆ, $0^h\ 11^m\ 48^s$.

November 21	+36 5	11.4
25		11.8
December 29		11.9

LALANDE 330, $0^h\ 13^m\ 15^s$.

October 23	+36 15	48.2
26		47.7

LALANDE 409, $0^h\ 15^m\ 41^s$.

November 6	+37 3	48.2
December 15		48.3

LALANDE 508, $0^h\ 19^m\ 3^s$.

November 3	+35 47	8.5
12		10.7

LALANDE 509, $0^h\ 19^m\ 15^s$.

December 8	+36 4	44.9
19		45.4

WEISSE 312, $0^h\ 19^m\ 52^s$.

December 21	+ 3 7	40.1
29		39.2

WEISSE 321, $0^h\ 20^m\ 33^s$.

November 7	− 4 39	39.4

B. A. C. 105, $0^h\ 22^m\ 52^s$.

1874.		° ′ ″
November 21	+76 19	24.9
26		26.1
December 2		26.6
4		24.9
5		25.7

(* 9.2), $0^h\ 22^m\ 57^s$.

December 15	+.7 25	0.1

LALANDE 656, $0^h\ 23^m\ 10^s$.

October 17	+37 37	49.6
23		48.2

LALANDE 767, $0^h\ 26^m\ 12^s$.

October 26	+35 9	45.9
November 6		46.8

WEISSE 425, $0^h\ 26^m\ 25^s$.

November 12	− 1 8	26.6

16 CASSIOPEÆ, S. P., $0^h\ 27^m\ 7^s$.

May 11	+66 3	17.7

LACAILLE 131, $0^h\ 27^m\ 56^s$.

December 8	−32 58	51.2

LALANDE 884, $0^h\ 29^m\ 20^s$.

October 17	+37 33	29.3
November 3		26.9
7		28.6

B. A. C. 154, $0^h\ 30^m\ 23^s$.

December 4	+81 47	51.2
5		49.7

LALANDE 963, $0^h\ 31^m\ 34^s$.

October 23	+36 22	30.9
November 21		33.5

LALANDE 975, $0^h\ 31^m\ 58^s$.

December 2	+35 54	4.0
15		3.8

LALANDE 1003, $0^h\ 32^m\ 54^s$.

November 14	+36 5	57.3
16		54.1

B. A. C. 175, S. P., $0^h\ 34^m\ 35^s$.

1874.		° ′ ″
May 8	+65 27	21.8
11		21.6
18		19.6

(* 8.2), $0^h\ 35^m\ 30^s$.

December 19	+ 1 6	24.7
21		22.5

21 CASSIOPEÆ, $0^h\ 37^m\ 25^s$.

November 21	+74 17	55.0
25		56.8

λ^2 SCULPTORIS, $0^h\ 38^m\ 10^s$.

December 8	−39 6	59.8
18	7	0.4

ζ ANDROMEDÆ, $0^h\ 40^m\ 44^s$.

December 29	+23 34	51.2

LALANDE 1281, $0^h\ 41^m\ 20^s$.

October 26	+35 2	56.9
November 3	2	59.4
6	3	1.0

LACAILLE 216, $0^h\ 41^m\ 34^s$.

December 21	−37 37	0.9

(* 8.8), $0^h\ 43^m\ 0^s$.

November 12	+ 3 2	14.5
14		14.1

(* 8.9), $0^h\ 43^m\ 4^s$.

November 7	+ 3 2	26.3

B. A. C. 225, S. P., $0^h\ 43^m\ 15^s$.

May 11	+83 1	20.4

B. A. C. 239, $0^h\ 45^m\ 36^s$.

December 19	+60 25	57.8

LALANDE 1443, $0^h\ 45^m\ 59^s$.

October 17	+37 51	50.0
23		50.2

LALANDE 1444, $0^h\ 46^m\ 4^s$.

1874.		° ′ ″
November 6	. .	+38 21 11.4
21	. .	10.0

LACAILLE 239, $0^h\ 46^m\ 52^s$.

December 8	. .	−31 2 34.6
15	. .	36.4

LACAILLE 241 (1st *), $0^h\ 47^m\ 5^s$.

December 4	. .	−25 27 49.5

LALANDE 1504, $0^h\ 47^m\ 20^s$.

November 25	. .	+38 29 10.4
26	. .	9.4

(* 8.5), $0^h\ 47^m\ 43^s$.

November 25	. .	+38 28 46.0
26	. .	45.5

γ CASSIOPEÆ, $0^h\ 49^m\ 8^s$.

November 3	. .	+60 2 2.1
16	. .	2.1
December 2	. .	1.8

ϕ^1 CETI, $0^h\ 49^m\ 46$.

November 12	. .	−11 56 57.0
December 5	. .	58.6

η ANDROMEDÆ, $0^h\ 50^m\ 33^s$.

December 29	. .	+22 44 12.7

(* 9.0), $0^h\ 51^m\ 55^s$.

October 17	. .	+ 1 55 18.8

2 URSÆ MINORIS, $0^h\ 51^m\ 58^s$.

November 14	. .	+85 34 48.4

LALANDE 1702, $0^h\ 53^m\ 23^s$

January 8	. .	+35 0 40.8

(* 9.0), $0^h\ 56^m\ 19^s$.

November 7	. .	+ 1 31 53.5

WEISSE 973, $0^h\ 56^m\ 32^s$.

November 26	. .	+ 1 40 5.1

WEISSE 972, $0^h\ 56^m\ 32^s$.

December 8	. .	+ 9 27 10.8
15	. .	9.1

(* 9.2), $0^h\ 56^m\ 52^s$.

December 18	. .	−24 46 26.3

μ CASSIOPEÆ, $0^h\ 59^m\ 56^s$.

December 29	. .	+54 18 1.3

O. ARG. S. 626, $1^h\ 0^m\ 5^s$.

1874.		° ′ ″
October 17	. .	−24 39 58.5
November 3	. .	58.7

ψ^2 PISCIUM, $1^h\ 1^m\ 15^s$.

December 21	. .	+20 4 7.2

B. A. C. 326, $1^h\ 1^m\ 49^s$.

November 21	. .	−33 29 11.7
25	. .	11.5

LALANDE 2027, $1^h\ 2^m\ 40^s$.

January 8	. .	+37 27 9.7

θ CASSIOPEÆ, $1^h\ 3^m\ 28^s$.

December 8	. .	+54 28 43.9
15	. .	43.1

B. A. C. 355, $1^h\ 5^m\ 17^s$.

December 4	. .	−32 55 9.7
5	. .	9.8

34 CETI, $1^h\ 5^m\ 23^s$.

November 16	. .	−− 2 55 15.9
26	. .	14.3
December 2	. .	16.2

B. A. C. 366, $1^h\ 6^m\ 59^s$.

December 18	. .	−35 52 30.7
19	. .	28.4

WEISSE 89, $1^h\ 7^m\ 43^s$.

October 17	. .	+ 0 49 51.9

88 PISCIUM, $1^h\ 8^m\ 12^s$.

December 31	. .	+ 6 19 42.2

39 CETI, $1^h\ 10^m\ 16^s$.

December 21	. .	− 3 9 50.0
29	. .	50.7

B. A. C. 385, $1^h\ 10^m\ 21^s$.

November 21	. .	−34 48 52.5
25	. .	52.5

POLARIS, $1^h\ 12^m\ 56^s$.

January 16	. .	+88 38(12.3)
October 23	. .	13.1
November 3	. .	14.4
6	. .	14.5
7	. .	14.1

(* 8.5), $1^h\ 14^m\ 10^s$.

January 10	. .	+ 5 57 37.7
November 16	. .	38.1
26	. .	38.3

B. A. C. 411, $1^h\ 16^m\ 30^s$.

1874.		° ′ ″
December 4	. .	−37 42 41.3
5	. .	42.1

(* 8.2), $1^h\ 17^m\ 15^s$.

December 18	. .	+38 24 15.4

(* 8.0), $1^h\ 17^m\ 19^s$.

December 18	. .	+38 22 1.2

δ CASSIOPEÆ, $1^h\ 17^m\ 38^s$.

November 21	. .	+59 34 45.2
25	. .	46.7
December 2	. .	45.9

B. A. C. 424, $1^h\ 18^m\ 26^s$.

December 8	. .	−32 28 3.2
15	. .	2.5

ρ PISCIUM, $1^h\ 19^m\ 31^s$.

December 19	. .	+18 30 56.9

LALANDE 2603, $1^h\ 20^m\ 4^s$.

November 12	. .	+39 0 3.2
14	. .	2.8

O. ARG. S. 850 (2d *), $1^h\ 21^m\ 0^s$.

January 10	. .	−17 54 57.5
December 21	. .	57.2
31	. .	55.9

38 CASSIOPEÆ, $1^h\ 21^m\ 55^s$.

May 11	. .	+69 36 54.3
18	. .	53.8

B. A. C. 445, $1^h\ 22^m\ 58^s$.

December 5	. .	−30 32 45.6

B. A. C. 464, $1^h\ 26^m\ 46^s$.

December 29	. .	+ 7 33 42.5

B. A. C. 466, $1^h\ 27^m\ 23^s$.

November 21	. .	−37 30 45.1
25	. .	45.9

50 ANDROMEDÆ, $1^h\ 29^m\ 27^s$.

November 14	. .	+40 46 26.6
16	. .	24.9
December 2	. .	27.3
8	. .	26.6

LACAILLE 466, $1^h\ 31^m\ 5^s$.

January 8	. .	−32 56 27.1

B. A. C. 491, $1^h\ 31^m\ 24^s$.

December 4	. .	−10 2 58.9
5	. .	59.3

LALANDE 3025, $1^h\ 32^m\ 36^s$.

1874.		° ′ ″
January 10	. .	+38 19 48.9
14	. .	48.4

B. A. C. 504, $1^h\ 32^m\ 59^s$.

December 8	. .	−25 39 50.0
15	. .	49.0

O. ARG. N. 1812, $1^h\ 33^m\ 6^s$.

December 31	. .	+67 24 14.8

τ ANDROMEDÆ, $1^h\ 33^m\ 13^s$.

December 8	. .	+39 56 15.4
19	. .	16.3
29	. .	16.8

(* 7.5), $1^h\ 33^m\ 40^s$.

January 16	. .	+37 37 37.5
November 21	. .	36.4

107 PISCIUM, $1^h\ 35^m\ 44^s$.

November 16	. .	+19 39 17.1
25	. .	17.4
December 2	. .	17.6

B. A. C. 491, S. P., $1^h\ 35^m\ 46^s$.

May 19	. .	+86 18 29.9

(* 8.0), $1^h\ 39^m\ 22^s$.

January 8	. .	+38 7 4.3
10	. .	4.1
14	. .	4.5

O. ARG. S. 1049, $1^h\ 39^m\ 30^s$.

November 14	. .	−26 59 34.5

ϵ SCULPTORIS, $1^h\ 39^m\ 49^s$.

November 26	. .	−25 40 58.6
December 4	. .	41 0.9
5	. .	40 58.5

O. ARG. S. 1056, $1^h\ 39^m\ 58^s$.

December 18	. .	−26 56 23.1
19	. .	23.3

γ^1 ARIETIS (1st *), $1^h\ 40^m\ 40^s$.

December 29	. .	+18 40 30.1

γ^1 ARIETIS (2d *), $1^h\ 40^m\ 40^s$.

December 29	. .	+18 40 39.7

(* 9.5), $1^h\ 42^m\ 2^s$.

December 15	. .	+ 7 2 7.3
31	. .	1 59.7
(Very faint.)		

(*), $1^h\ 42^m\ 7^s$.

January 16	. .	+ 7 3 20.3
December 8	. .	18.8

(* 8.5), $1^h\ 43^m\ 19^s$.

1874.			°	′	″
December 21	.	.	+13	36	0.3

ζ CETI, $1^h\ 45^m\ 15^s$.

January	10	. .	−10	57	29.6
	12	. .			31.1

ε CASSIOPEÆ, S. P., $1^h\ 45^m\ 33^s$.

May	19	. .	+63	2	51.1
	21	. .			53.0

α TRIANGULI, $1^h\ 45^m\ 56^s$.

November	25	. .	+28	57	49.0
December	2	. .			49.0

B. A. C. 576, $1^h\ 47^m\ 33^s$.

January	14	. .	+36	30	31.0

B. A. C. 575, $1^h\ 47^m\ 23^s$.

November	26	. .	+40	5	0.6
December	4	. .		4	59.8

B. A. C. 607, $1^h\ 52^m\ 40^s$.

December	19	. .	+20	26	43.9

50 CASSIOPEÆ, $1^h\ 52^m\ 45^s$.

May	11	. .	+71	48	36.4
	18	. .			34.4
	19	. .			36.0
	21	. .			35.6

57 CETI, $1^h\ 53^m\ 53^s$.

December	21	. .	−21	26	16.1
	31	. .			15.1

WEISSE 963, $1^h\ 55^m\ 0^s$.

January	8	. .	+ 3	26	34.0
	14	. .			36.2

B. A. C. 627, $1^h\ 55^m\ 42^s$.

November	25	. .	−30	36	29.3
	26	. .			31.2

γ ANDROMEDÆ (1st *), $1^h\ 56^m\ 14^s$.

November	14	. .	+41	43	25.4
	21	. .			24.4

γ ANDROMEDÆ (2d *), $1^h\ 56^m\ 14^s$.

November	14	. .	+41	43	29.6
	21	. .			29.0

LACAILLE 607, $1^h\ 56^m\ 48^s$.

December	8	. .	−22	34	26.9
	15	. .			25.0

58 ANDROMEDÆ, $2^h\ 0^m\ 56^s$.

December	2	. .	+37	15	36.3
	4	. .			34.8
	19	. .			36.7

(* 9.0), $2^h\ 2^m\ 23^s$.

1874.			°	′	″
December 18	.	.	+39	3	1.8

64 CETI, $2^h\ 4^m\ 44^s$.

November	14	. .	+ 7	58	44.5
	25	. .			45.9
	26	. .			45.0

WEISSE 51, $2^h\ 5^m\ 27^s$.

January	8	. .	+ 3	59	50.2
	12	. .			50.9
December	8	. .			(39.6)
	21	. .			48.8

O. ARG. S., 1388, $2^h\ 6^m\ 25^s$.

January	10	. .	−29	32	58.0
	14	. .			59.8

(* 8.5), $2^h\ 10^m\ 52^s$.

January	12	. .	+55	17	51.3
December	4	. .			55.2
	31	. .			47.4

θ ARIETIS, $2^h\ 11^m\ 11^s$.

December	19	. .	+19	19	1.3

WEISSE 147, $2^h\ 11^m\ 32^s$.

November	26	. .	+ 1	9	40.8
December	2	. .			40.7

B. A. C. 723, $2^h\ 13^m\ 24^s$.

November	25	. .	−26	32	32.7
December	8	. .			33.9

WEISSE 188, $2^h\ 13^m\ 46^s$.

January	8	. .	+13	5	29.7
	10	. .			31.6

69 CETI, $2^h\ 15^m\ 34^s$.

December	21	. .	− 0	10	52.1

LALANDE 4387, $2^h\ 16^m\ 25^s$.

January	14	. .	+38	46	20.4

B. A. C. 742, $2^h\ 17^m\ 47^s$.

January	16	. .	−30	26	25.9
December	4	. .			23.8
	18	. .			25.3

WEISSE 288, $2^h\ 18^m\ 51^s$.

November	26	. .	− 5	19	3.3
December	2	. .			4.5

ι CASSIOPEÆ, $2^h\ 18^m\ 46^s$.

January	24	. .	+66	50	3.2
	29	. .			2.6

ι CASSIOPEÆ, S. P., $2^h\ 19^m\ 11^s$.

May	21	. .	+66	50	3.7
	22	. .			5.0
	26	. .			3.5

12 TRIANGULI, $2^h\ 20^m\ 50^s$.

1874.			°	′	″
December 31	.	.	+29	6	18.6

(* 6.5), $2^h\ 21^m\ 16^s$.

January	8	. .	+36	45	56.3

LACAILLE 750, $2^h\ 23^m\ 18^s$.

January	10	. .	−23	46	13.6
	14	. .			14.3

(*), $2^h\ 24^m\ 57^s$.

December	8	. .	+38	59	27.7
	18	. .			28.7

σ CETI, $2^h\ 26^m\ 10^s$.

December	2	. .	−15	47	56.9
	4	. .			56.4

WEISSE 437, $2^h\ 27^m\ 43^s$.

December	21	. .	− 6	33	39.8

LALANDE 4761, $2^h\ 28^m\ 15^s$.

January	12	. .	+36	30	20.8
December	19	. .			19.7

ν CETI, $2^h\ 29^m\ 19^s$.

December	31	. .	+ 5	2	31.6

WEISSE (2) 711, $2^h\ 30^m\ 40^s$.

January	16	. .	+25	39	28.7
	24	. .			29.4

LACAILLE 796, $2^h\ 30^m\ 48^s$.

January	8	. .	−24	28	5.9
	14	. .			7.0

ν ARIETIS, $2^h\ 31^m\ 44^s$.

December	8	. .	+21	24	54.4
	18	. .			52.8

B. A. C. 814, S. P., $2^h\ 34^m\ 2^s$.

May	11	. .	+67	17	15.2
	13	. .			12.2
	21	. .			15.1
June	4	. .			13.4

(* 8.0), $2^h\ 35^m\ 36^s$.

December	2	. .	+37	37	47.1
	4	. .			45.7

O. ARG. S. 1780, $2^h\ 38^m\ 26^s$.

January	10	. .	−28	58	17.2
	14	. .			24.6

B. A. C. 854, $2^h\ 38^m\ 38^s$.

January	24	. .	−26	1	54.4
	29	. .			56.9

WEISSE (2) 915, $2^h\ 39^m\ 15^s$.

February	4	. .	+35	27	7.4
December	19	. .			7.1
	21	. .			8.6

LALANDE 5115, $2^h\ 39^m\ 56^s$.

1874.			°	′	″
December	15	. .	+38	58	32.2
	18	. .			27.8

WEISSE (2) 972, $2^h\ 41^m\ 16^s$.

January	8	. .	+24	46	8.5
December	31	. .			6.7

LALANDE 5181, $2^h\ 41^m\ 47^s$.

December	4	. .	+36	16	58.3
	8	. .			58.4

17 PERSEI, $2^h\ 43^m\ 45^s$.

January	24	. .	+34	32	23.2
	29	. .			22.0

σ ARIETIS, $2^h\ 44^m\ 33^s$.

January	12	. .	+14	33	42.4
	16	. .			41.1
	19	. .			42.7
December	21	. .			42.3

20 PERSEI, $2^h\ 45^m\ 46^s$.

January	10	. .	+37	49	20.5
	14	. .			19.9

B. A. C. 896, S. P., $2^h\ 48^m\ 13^s$.

May	8	. .	+78	55	0.9
	11	. .			2.5

η ERIDANI, $2^h\ 50^m\ 20^s$.

December	2	. .	− 9	24	5.0

47 ARIETIS, $2^h\ 50^m\ 56^s$.

December	4	. .	+20	9	42.0

(* 8.5), $2^h\ 52^m\ 22^s$.

December	8	. .	+14	41	23.2
	18	. .			26.2
	31	. .			31.3

WEISSE 881, $2^h\ 52^m\ 44^s$.

January	8	. .	+14	38	54.3

B. A. C. 951, $2^h\ 56^m\ 16^s$.

December	2	. .	−28	34	31.2
	15	. .			29.4

(* 9.0), $2^h\ 58^m\ 3^s$.

January	10	. .	+37	5	59.4
	24	. .		6	0.7

LALANDE 5682, $2^h\ 58^m\ 32^s$.

January	12	. .	+38	6	43.5
	14	. .			44.5

(* 8.5), $2^h\ 58^m\ 42^s$.

December	8	. .	−23	38	13.2

B. A. C. 960, S. P., $3^h\ 2^m\ 48^s$.

1874.			° ′ ″
May	11	. .	+84 27 30.4
	18	. .	29.7
	21	. .	32.2
	26	. .	30.9

B. A. C. 980, $3^h\ 3^m\ 2^s$.

December	19	. .	+26 24 44.4

48 Cephei, S. P., $3^h\ 4^m\ 28^s$.

May	30	. .	+77 16 5.3
June	1	. .	5.5
	4	. .	4.5

(* 9.0), $3^h\ 4^m\ 56^s$.

January	8	. .	+38 27 0.1
	24	. .	26 59.1

(* 8.5), $3^h\ 5^m\ 12^s$.

January	10	. .	+38 29 49.5
	24	. .	49.1

(*), $3^h\ 5^m\ 35^s$.

January	10	. .	+38 29 32.4

B. A. C. 1010, $3^h\ 9^m\ 28^s$.

December	2	. .	− 9 14 18.0

ζ Eridani, $3^h\ 9^m\ 45^s$.

December	2	. .	− 9 17 21.1
	15	. .	19.4

Weisse (2) 269, $3^h\ 11^m\ 2^s$.

December	4	. .	+23 51 49.9
	18	. .	42.0

(Very faint.)

τ^1 Arietis, $3^h\ 14^m\ 1^s$.

December	8	. .	+20 41 29.0
	15	. .	28.5

B. A. C. 1047, $3^h\ 15^m\ 21^s$.

January	8	. .	−27 3 45.9
	10	. .	46.7

Weisse (2) 393, $3^h\ 19^m\ 52^s$.

January	14	. .	+18 18 49.8
	24	. .	49.9

66 Arietis, $3^h\ 21^m\ 5^s$.

January	29	. .	+22 22 4.0

B. A. C. 1073, $3^h\ 21^m\ 8^s$.

December	8	. .	−27 45 42.8

(* 9.0), $3^h\ 21^m\ 28^s$.

December	4	. .	+12 16 27.6
	18	. .	28.1

17 Eridani, $3^h\ 24^m\ 22^s$.

1874.			° ′ ″
January	8	. .	− 5 30 30.4
	12	. .	28.6

B. A. C. 1061, S. P., $3^h\ 25^m\ 6^s$.

May	18	. .	+86 14 40.7
	26	. .	41.2

Lacaille 1124, $3^h\ 26^m\ 28^s$.

January	14	. .	−26 2 34.2
	24	. .	34.2

(* 9.0), $3^h\ 27^m\ 35^s$.

December	31	. .	+31 16 54.4

(* 9.5), $3^h\ 29^m\ 54^s$.

December	4	. .	− 9 5 2.8

10 Tauri, $3^h\ 30^m\ 30^s$.

December	2	. .	0 0 0.0

Weisse 569, $3^h\ 32^m\ 20^s$.

December	15	. .	+13 28 55.7
	18	. .	54.3

Weisse (2) 669 (2d *), $3^h\ 32^m\ 33^s$.

February	4	. .	+38 42 25.4

B. A. C. 1150, $3^h\ 37^m\ 15^s$.

January	8	. .	−32 20 31.5

Lacaille 1196, $3^h\ 38^m\ 7^s$.

January	14	. .	−31 25 14.2

21 Tauri, $3^h\ 38^m\ 25^s$.

January	24	. .	+24 9 33.4
December	4	. .	32.1

(*), $3^h\ 38^m\ 25^s$.

January	29	. .	+20 9 25.4

(*), $3^h\ 38^m\ 30^s$.

January	29	. .	+20 7 51.0

22 Tauri, $3^h\ 38^m\ 36^s$.

January	24	. .	+24 7 58.5
December	2	. .	59.8
	4	. .	58.2

(* 7.3), $3^h\ 39^m\ 3^s$.

December	8	. .	+23 17 13.7

B. A. C. 1163, $3^h\ 39^m\ 29^s$.

December	2	. .	+24 7 39.0

24 Tauri, $3^h\ 39^m\ 55^s$.

December	31	. .	+23 43 28.0

(* 8.0), $3^h\ 39^m\ 58^s$.

1874.			° ′ ″
December	15	. .	+11 16 49.3
	18	. .	48.4

28 Tauri, $3^h\ 41^m\ 44^s$.

December	31	. .	+23 44 58.3

(*), $3^h\ 41^m\ 45^s$.

February	4	. .	+23 29 41.4

A, 34 Pleiadum, $3^h\ 42^m\ 19^s$.

December	8	. .	+23 19 35.3

O. Arg. S. 2571, $3^h\ 44^m\ 18^s$.

January	24	. .	−27 29 34.7

Groombridge 745, $3^h\ 45^m\ 14^s$.

January	29	. .	+75 48 33.6

(*), $3^h\ 45^m\ 20^s$.

January	8	. .	−32 40 8.0

Groombridge 748, $3^h\ 47^m\ 49^s$.

January	14	. .	+75 48 10.5
	29	. .	12.1

Groombridge 751, $3^h\ 48^m\ 22^s$.

January	14	. .	+75 47 10.8
	29	. .	7.8

Lalande 7206, $3^h\ 48^m\ 25^s$.

December	31	. .	+34 42 37.0

B. A. C. 1211, $3^h\ 49^m\ 4^s$.

February	4	. .	+80 20 46.8
	16	. .	46.8

Lalande 7391, $3^h\ 54^m\ 8^s$.

January	24	. .	+38 44 36.6
December	8	. .	36.1
	15	. .	33.1

(* 8.5), $3^h\ 54^m\ 32^s$.

January	8	. .	+35 2 47.8

(* 8.0), $3^h\ 57^m\ 58^s$.

December	18	. .	+21 42 47.7

B. A. C. 1247, $3^h\ 59^m\ 3^s$.

February	4	. .	+83 29 35.1

Weisse (2) 1275, $4^h\ 0^m\ 18^s$.

January	14	. .	+20 55 28.4

B. A. C. 1273, $4^h\ 0^m\ 30^s$.

December	15	. .	−27 59 54.1

O. Arg. S. 2803, $4^h\ 0^m\ 50^s$.

1874.			° ′ ″
January	24	. .	−23 37 18.7
	29	. .	21.4

(* 9.0), $4^h\ 1^m\ 18^s$.

January	8	. .	−31 23 24.6

Weisse 24, $4^h\ 3^m\ 39^s$.

December	8	. .	+14 54 20.4

Lacaille 1370, $4^h\ 4^m\ 42^s$.

February	16	. .	−25 22 28.4

(* 8.7), $4^h\ 6^m\ 19^s$.

December	18	. .	+44 27 36.0

(* 7.5), $4^h\ 8^m\ 23^s$.

December	15	. .	−31 38 55.0

B. A. C., 1300, S. P., $4^h\ 8^m\ 52^s$.

June	17	. .	+64 49 49.1
	22	. .	47.7
	24	. .	45.1
	26	. .	47.9

o^2 Eridani, $4^h\ 9^m\ 32^s$.

January	24	. .	− 7 51 1.3
	29	. .	3.8
February	10	. .	4.1

51 Tauri, $4^h\ 10^m\ 56^s$.

February	4	. .	+21 16 9.3
	16	. .	7.9

Lalande 7994, $4^h\ 11^m\ 9^s$.

December	8	. .	+37 41 24.3

B. A. C. 1340, $4^h\ 14^m\ 27^s$.

January	8	. .	−25 19 46.9

56 Persei, $4^h\ 16^m\ 27^s$.

December	15	. .	+33 40 0.0
	18	. .	2.1

Weisse (2) 344, $4^h\ 17^m\ 16^s$.

January	24	. .	+16 35 34.8
	29	. .	34.1

(* 7.5), $4^h\ 18^m\ 4^s$.

February	10	. .	−25 40 48.9
	18	. .	48.2

(* 8.0), $4^h\ 23^m\ 55^s$.

January	24	. .	−32 44 43.5

84 Tauri, $4^h\ 23^m\ 58^s$.

January	29	. .	+14 49 52.2
February	16	. .	52.0

(* 9.5), $4^h\ 24^m\ 21^s$.

1874.			°	′	″
December	18	. .	+35	39	37.0

LACAILLE 1180, $4^h\ 24^m\ 44^s$.

January	8	. .	−29	18	17.6
	14	. .			18.2

B. A. C. 1408, $4^h\ 26^m\ 49^s$.

December	15	. .	+28	41	42.0

B. A. C. 1399, $4^h\ 27^m\ 6^s$.

February	10	. .	+80	24	26.2

(*), $4^h\ 34^m\ 17^s$.

January	8	. .	+38	10	58.7
	14	. .			57.1

WEISSE 727, $4^h\ 34^m\ 26^s$.

January	24	. .	+ 2	15	34.6
	29	. .			33.9
December	18	. .			34.5

B. A. C. 1450, $4^h\ 34^m\ 54^s$.

February	16	. .	−24	43	50.3

(* 8.5), $4^h\ 35^m\ 28^s$.

February	18	. .	−26	1	10.4

B. A. C. 1448, S. P., $4^h\ 36^m\ 45^s$.

June	4	. .	+80	58	40.1
	9	. .			39.2
	12	. .			39.7
	17	. .			42.6
	22	. .			41.7
July	14	. .			(44.5)

B. A. C. 1471, $4^h\ 39^m\ 11^s$.

January	29	. .	−27	48	46.5
February	4	. .			44.7

α CAMELOPARDI, S. P., $4^h\ 41^m\ 35^s$.

June	24	. .	+66	7	29.7
	26	. .			33.2
	29	. .			29.0
July	3	. .			31.3
	6	. .			33.0
	8	. .			32.7
	14	. .			34.1

(* 8.5), $4^h\ 42^m\ 32^s$.

January	24	. .	+10	44	55.0

WEISSE 925, $4^h\ 43^m\ 56^s$.

February	10	. .	+ 1	18	31.8
	16	. .			31.3
	18	. .			32.2

(* 8.2), $4^h\ 44^m\ 43^s$.

February	16	. .	+ 1	17	46.8

WEISSE 957, $4^h\ 45^m\ 26^s$.

1874.			°	′	″
January	14	. .	+14	2	19.1
February	4	. .			18.1

(* 8.6), $4^h\ 47^m\ 5^s$.

December	18	. .	+43	45	35.0

B. A. C. 1510, S. P., $4^h\ 48^m\ 49^s$.

June	12	. .	+73	52	35.8
July	14	. .			38.5

LACAILLE 1659 (1st *), $4^h\ 51^m\ 7^s$.

January	24	. .	−39	57	36.5

LACAILLE 1659 (2d *), $4^h\ 51^m\ 13^s$.

January	24	. .	−39	57	30.9
	29	. .			32.0

(*), $4^h\ 52^m\ 9^s$.

February	4	. .	+60	14	6.5

64 ERIDANI, $4^h\ 54^m\ 7^s$.

January	14	. .	−12	43	29.8

LACAILLE 1673, $4^h\ 54^m\ 8^s$.

February	10	. .	−28	38	1.5
	16	. .		37	59.1

ι TAURI, $4^h\ 55^m\ 34^s$.

March	2	. .	+21	24	27.2

(* 8.0), $4^h\ 56^m\ 35^s$.

February	18	. .	−31	34	45.4

(* 8.5), $4^h\ 56^m\ 47^s$.

February	18	. .	−31	35	25.6

O. ARG. S. 3620, $4^h\ 58^m\ 50^s$.

February	26	. .	−27	50	16.1

103 TAURI, $5^h\ 0^m\ 27^s$.

January	29	. .	+24	5	46.5

O. ARG. S. 3670, $5^h\ 1^m\ 34^s$.

February	4	. .	−28	43	45.4
	16	. .			49.8

RUMKER 2553, $5^h\ 3^m\ 5^s$.

January	14	. .	+30	8	26.4

WEISSE (2) 49, $5^h\ 4^m\ 30^s$.

January	24	. .	+30	16	54.6

LACAILLE 1738, $5^h\ 5^m\ 39^s$.

February	18	. .	−26	4	8.0
March	2	. .			9.5
	4	. .			9.5

(* 10.0), $5^h\ 5^m\ 57^s$.

1874.			°	′	″
January	24	. .	+30	18	47.5

(* 7.5), $5^h\ 7^m\ 46^s$.

January	29	. .	+30	21	4.8
February	10	. .			3.6

(* 8.3), $5^h\ 8^m\ 42^s$.

February	26	. .	+30	14	7.5

B. A. C. 1619, S. P., $5^h\ 10^m\ 8^s$.

June	12	. .	+77	51	21.1
	22	. .			20.6
	24	. .			20.5

LACAILLE 1780, $5^h\ 10^m\ 45^s$.

February	4	. .	−36	47	46.3
	16	. .			46.5

WEISSE (2) 287, $5^h\ 11^m\ 58^s$.

March	2	. .	+30	22	32.8

(* 8.5), $5^h\ 14^m\ 35^s$.

January	29	. .	−25	23	8.2

WEISSE (2) 430, $5^h\ 16^m\ 3^s$.

February	10	. .	+37	55	39.8
	18	. .			38.2

(* 8.8), $5^h\ 19^m\ 4^s$.

January	24	. .	+38	43	31.2

(* 8.6), $5^h\ 19^m\ 7^s$.

March	2	. .	+39	3	23.4

(* 8.8), $5^h\ 19^m\ 26^s$.

February	4	. .	+39	4	36.5
March	2	. .			37.8

O. ARG. S. 3917, $5^h\ 19^m\ 36^s$.

February	26	. .	−16	10	48.7

(* 8.5), $5^h\ 20^m\ 32^s$.

January	24	. .	+38	42	17.0

SCHJELLERUP 1787, $5^h\ 21^m\ 19^s$.

January	29	. .	− 0	22	3.9

GROOMBRIDGE 980, $5^h\ 22^m\ 49^s$.

March	4	. .	+38	13	12.7

B. A. C. 1706, S. P., $5^h\ 23^m\ 0^s$.

June	12	. .	+74	57	20.4
	24	. .			20.0

(*), $5^h\ 27^m\ 46^s$.

March	2	. .	− 5	41	41.8

RUMKER 1473, $5^h\ 27^m\ 49^s$.

1874.			°	′	″
February	26	. .	+21	7	8.2

(* 9.0), $5^h\ 27^m\ 53^s$.

January	24	. .	−13	37	17.7

GROOMBRIDGE 990, $5^h\ 28^m\ 52^s$.

February	18	. .	+51	21	37.7

GR. CAT. GEN. 599, $5^h\ 28^m\ 52^s$.

February	26	. .	+21	6	9.9

δ ORIONIS, $5^h\ 28^m\ 56^s$.

February	16	. .	− 5	28	11.4

B. A. C. 1751, S. P., $5^h\ 29^m\ 52^s$.

June	17	. .	+65	37	33.7
	22	. .			33.2

B. A. C. 1786, $5^h\ 32^m\ 41^s$.

February	4	. .	−28	42	7.6
	10	. .			9.0

B. A. C. 1787, $5^h\ 32^m\ 50^s$.

February	4	. .	−28	46	1.8
	10	. .			1.8

LALANDE 10621, $5^h\ 32^m\ 54^s$.

January	29	. .	+38	7	7.4
March	4	. .			7.5

LALANDE 10650, $5^h\ 33^m\ 41^s$.

January	29	. .	+38	7	49.3
March	4	. .			49.2

LALANDE 10666, $5^h\ 34^m\ 10^s$.

January	29	. .	+38	7	56.2
March	24	. .			56.1

(* 8.7), $5^h\ 35^m\ 27^s$.

February	18	. .	+38	11	15.2

(* 8.8), $5^h\ 37^m\ 39^s$.

January	29	. .	+38	5	11.0
February	16	. .			14.2

(*), $5^h\ 38^m\ 58^s$.

February	10	. .	+38	7	14.3

WEISSE 1045, $5^h\ 42^m\ 4^s$.

February	26	. .	−13	34	22.8
March	2	. .			19.2

B. A. C. 1851, $5^h\ 43^m\ 6^s$.

February	4	. .	+ 9	49	48.5
	10	. .			49.5
March	4	. .			48.3

O. ARG. S. 4395, $5^h\ 47^m\ 0^s$.

1874.			° ′ ″
January	29 . .	−25	58 37.4

(*), $5^h\ 50^m\ 48^s$.

February	16 . .	−29	56 22.7
	18 . .		23.1

(*), $5^h\ 50^m\ 50^s$.

February	10 . .	−29	59 16.7
	16 . .		16.2
	18 . .		16.7

(* 9.5), $5^h\ 50^m\ 53^s$.

March	2 . .	+19	46 48.9

(* 8.5), $5^h\ 52^m\ 2^s$.

March	2 . .	+19	46 0.9
	4 . .		0.7

WEISSE (2) 1686, $5^h\ 52^m\ 35^s$.

March	10 . .	+20	3 45.3

WEISSE (2) 1701, $5^h\ 52^m\ 50^s$.

March	10 . .	+20	2 39.9

(* 7.5), $5^h\ 53^m\ 9^s$.

January	29 . .	−31	56 5.4
February	4 . .		3.2

B. A. C. 1879, S. P., $5^h\ 56^m\ 50^s$.

June	24 . .	+86	45 44.6
	26 . .		46.9

B. A. C. 1947, $5^h\ 58^m\ 52^s$.

February	10 . .	+38	5 34.3
	26 . .		(28.8)
March	10 . .		32.2

LACAILLE 2130, $6^h\ 1^m\ 15^s$.

February	18 . .	−29	44 46.4
March	4 . .		47.0

(* 9.5), $6^h\ 3^m\ 3^s$.

March	2 . .	+31	9 43.5

(* 8.5), $6^h\ 3^m\ 57^s$.

February	16 . .	+31	26 59.3

(* 8.2), $6^h\ 4^m\ 6^s$.

February	16 . .	+31	26 15.9

22 CAMELOPARDI, S. P., $6^h\ 5^m\ 1^s$.

June	24 . .	+69	21 35.9
	26 . .		38.6
	29 . .		36.4
July	14 . .		39.1
	18 . .		36.9

71 ORIONIS, $6^h\ 7^m\ 28^s$.

1874.			° ′ ″
January	29 . .	+19	11 48.6

(* 9.0), $6^h\ 7^m\ 28^s$.

March	10 . .	+38	53 6.7

LALANDE 11959, $6^h\ 11^m\ 5^s$.

February	18 . .	+38	28 59.9
	26 . .		57.4

(* 7.5), $6^h\ 15^m\ 27^s$.

January	29 . .	−29	33 37.3
February	16 . .		38.9
March	2 . .		37.6

LACAILLE 2232, $6^h\ 16^m\ 6^s$.

January	29 . .	−29	36 42.7
February	26 . .		43.4
March	2 . .		44.4

B. A. C. 2069, S. P., $6^h\ 21^m\ 7^s$.

June	29 . .	+78	5 22.9
July	18 . .		22.7

(* 9.0), $6^h\ 22^m\ 27^s$.

February	18 . .	−25	45 45.1

O. ARG. S. 5176, $6^h\ 24^m\ 3^s$.

February	18 . .	−25	48 14.6

B. A. C. 2110, $6^h\ 24^m\ 16^s$.

February	16 . .	+32	32 30.3

B. A. C. 2095, S., P, $6^h\ 24^m\ 52^s$.

June	26 . .	+79	41 42.3

O. ARG. S. 5198, $6^h\ 25^m\ 1^s$.

March	2 . .	−25	48 0.8

O. ARG. S. 5199, $6^h\ 25^m\ 5^s$.

February	18 . .	−25	48 18.6
March	2 . .		21.0

(* 7.5), $6^h\ 26^m\ 47^s$.

March	4 . .	+37	48 39.8
	13 . .		41.4

(* 8.5), $6^h\ 27^m\ 12^s$.

March	10 . .	−31	9 34.6

23 GEMINORUM, $6^h\ 28^m\ 45^s$.

January	29 . .	+16	53 49.0
February	26 . .		46.8

O. ARG. S. 5463, $6^h\ 34^m\ 42^s$.

1874.			° ′ ″
March	2 . .	−23	35 27.8

LACAILLE 2388, $6^h\ 34^m\ 54^s$.

January	29 . .	−30	21 1.5
February	16 . .		0.7

(* 8.5), $6^h\ 35^m\ 45^s$.

February	18 . .	+36	16 38.1

WEISSE (2) 1044, $6^h\ 35^m\ 46^s$.

February	10 . .	+36	13 51.4
	18 . .		51.1
	26 . .		49.9

ε GEMINORUM, $6^h\ 36^m\ 12^s$.

March	25 . .	+25	15 12.4

56 AURIGÆ, $6^h\ 37^m\ 34^s$.

March	27 . .	+43	42 0.7

56 AURIGÆ (2d *), $6^h\ 37^m\ 36^s$.

March	13 . .	+43	42 44.9

42 CAMELOPARDI, S. P., $6^h\ 37^m\ 52^s$.

August	26 . .	+67	42 24.4
September	19 . .		24.0

LACAILLE 2420, $6^h\ 38^m\ 55^s$.

March	4 . .	−27	27 57.8
	10 . .		56.7

51 CEPHEI, $6^h\ 40^m\ 50^s$.

February	20 . .	+87	14 8.5
March	4 . .		8.2
	10 . .		7.7

B. A. C. 2210, S. P., $6^h\ 41^m\ 44^s$.

August	28 . .	+77	7 57.1

O. ARG. S. 5718, $6^h\ 43^m\ 23^s$.

March	20 . .	−27	14 27.4

O. ARG. S. 5745, $6^h\ 44^m\ 31^s$.

February	16 . .	−28	30 35.8

B. A. C. 2244, $6^h\ 45^m\ 4^s$.

January	29 . .	−27	11 22.4
March	2 . .		23.9

O. ARG. S. 5772, $6^h\ 45^m\ 19^s$.

March	2 . .	−27	9 46.7

(* 8.3), $6^h\ 47^m\ 0^s$.

1874.			° ′ ″
February	18 . .	−28	34 7.9
	26 . .		8.4

B. A. C. 2247, S. P., $6^h\ 47^m\ 6^s$.

August	26 . .	+70	58 23.8

(*), $6^h\ 47^m\ 9^s$.

February	10 . .	−28	35 10.0
	26 . .		10.3

LACAILLE 2519, $6^h\ 49^m\ 35^s$.

March	13 . .	−31	38 38.6

O. ARG. S. 5906, $6^h\ 50^m\ 19^s$.

March	25 . .	−28	52 33.5

LACAILLE 2528, $6^h\ 50^m\ 52^s$.

March	13 . .	−31	37 42.1

(* 7.8), $6^h\ 51^m\ 45^s$.

February	16 . .	−24	48 15.0

(* 8.5), $6^h\ 52^m\ 12^s$.

March	10 . .	−30	43 40.5

(* 9.5), $6^h\ 54^m\ 1^s$.

February	18 . .	−26	13 16.2

O. ARG. S. 6004, $6^h\ 54^m\ 10^s$.

March	2 . .	−28	47 27.5
	4 . .		25.0

LACAILLE 2558, $6^h\ 54^m\ 35^s$.

February	10 . .	−27	43 8.3

17. LYNCIS (1st *), $6^h\ 58^m\ 22^s$.

February	16 . .	+60	59 12.5
March	10 . .		13.2

17 LYNCIS (2d *), $6^h\ 58^m\ 30^s$.

February	16 . .	+60	56 21.3
March	10 . .		19.9

B. A. C. 2317, S. P., $7^h\ 1^m\ 28^s$.

August	26 . .	+81	28 46.4
	28 . .		45.7

(* 9.5), $7^h\ 2^m\ 39^s$.

March	2 . .	−14	42 25.0

(* 8.5), $7^h\ 3^m\ 17^s$.

March	2 . .	−14	45 19.1

LALANDE 13873, $7^h\ 3^m\ 55^s$.

March	13 . .	+36	19 58.9
	25 . .		58.3

B. A. C. 2326, $7^h\ 4^m\ 32^s$.

1874.			°	′	″
March	20	. .	+82	38	47.9

(*), $7^h\ 6^m\ 49^s$.

March	20	. .	−14	16	54.0

O. ARG. S. 6442, $7^h\ 7^m\ 50^s$.

March	10	. .	−27	4	50.1

27 CANIS MAJORIS, $7^h\ 9^m\ 7^s$.

January	29	. .	−26	8	12.2

WEISSE 274, $7^h\ 10^m\ 8^s$.

March	25	. .	−14	16	41.0

(* 8.2), $7^h\ 10^m\ 17^s$.

March	2	. .	−23	29	16.1

WEISSE 283, $7^h\ 10^m\ 22^s$.

March	25	. .	−14	17	23.2

WEISSE 290, $7^h\ 10^m\ 31^s$.

March	4	. .	−14	38	12.1

λ GEMINORUM, $7^h\ 10^m\ 52^s$.

February	20	. .	+16	45	55.8

LALANDE, 14120, $7^h\ 11^m\ 0^s$.

March	13	. .	+36	54	7.4
	27	. .			7.6

LACAILLE 2695, $7^h\ 11^m\ 10^s$.

March	20	. .	−30	12	49.1

WEISSE 316, $7^h\ 11^m\ 21^s$.

March	4	. .	−14	37	30.8

B. A. C. 2379, S. P., $7^h\ 11^m\ 42^s$.

August	26	. .	+81	8	45.6

WEISSE (2) 327, $7^h\ 11^m\ 53^s$.

February	10	. .	+22	15	7.7

O. ARG. S. 6553, $7^h\ 12^m\ 6^s$.

February	16	. .	−30	40	21.2
	18	. .			26.9

O. ARG. S. 6554, $7^h\ 12^m\ 6^s$.

February	16	. .	−30	40	59.1
	18	. .			52.8

WEISSE 461, $7^h\ 16^m\ 14^s$.

March	2	. .	−14	50	54.0

(*), $7^h\ 17^m\ 10^s$.

March	27	. .	−24	39	50.6

(* 9.0), $7^h\ 17^m\ 48^s$.

1874.			°	′	″
March	13	. .	−14	31	17.3

PIAZZI 67, S. P., 7^h 17

August	26	. .	+68	43	9.8
	28	. .			10.5

(* 8.5), $7^h\ 18^m\ 13^s$.

March	10	. .	+10	23	10.4

O. ARG. S. 6754, $7^h\ 19^m\ 12^s$.

March	4	. .	−18	46	36.7

O. ARG. S. 6762, $7^h\ 19^m\ 19^s$.

March	4	. .	−18	45	59.8

(* 8.0), $7^h\ 19^m\ 53^s$.

February	10	. .	−31	32	14.0
March	28	. .			10.1
	30	. .			11.7

B. A. C. 2461, $7^h\ 19^m\ 56^s$.

February	10	. .	−31	33	45.4
March	28	. .			44.4
	30	. .			46.4

WEISSE (2) 667, $7^h\ 24^m\ 10^s$.

February	18	. .	+15	30	48.9
	20	. .			48.3

(* 8.5), $7^h\ 24^m\ 30^s$.

February	16	. .	−20	32	9.8
March	2	. .			14.6

(* 7.0), $7^h\ 25^m\ 1^s$.

March	2	. .	−20	32	47.8

WEISSE (2) 678, $7^h\ 25^m\ 3^s$.

March	10	. .	+41	26	26.8

B. A. C. 2320, $7^h\ 29^m\ 16^s$.

March	27	. .	+88	59	46.2

O. ARG. S. 7063, $7^h\ 29^m\ 47^s$.

March	13	. .	−29	8	6.0
	20	. .			4.7

(* 8.3), $7^h\ 29^m\ 48^s$.

March	4	. .	+21	39	7.2

LACAILLE 2864, $7^h\ 30^m\ 23^s$.

March	25	. .	−25	52	38.5
	30	. .			37.4

o GEMINORUM, $7^h\ 30^m\ 58^s$.

February	18	. .	+34	52	14.8
	20	. .			15.0

WEISSE (2) 915, $7^h\ 32^m\ 15^s$.

1874.			°	′	″
March	10	. .	+20	54	58.8

(* 8.0), $7^h\ 34^m\ 21^s$.

March	28	. .	+21	16	13.1

(* 8.3), $7^h\ 34^m\ 37^s$.

March	2	. .	−34	32	4.6

(* 8.0), $7^h\ 34^m\ 45^s$.

March	13	. .	−14	21	15.4

(* 9.0), $7^h\ 35^m\ 24^s$.

March	2	. .	−34	30	32.9

WEISSE (2) 1022, $7^h\ 35^m\ 49^s$.

March	4	. .	+21	11	57.7

(* 8.2), $7^h\ 41^m\ 21^s$.

March	27	. .	+38	20	3.5
	30	. .			3.0

O. ARG. S. 7442, $7^h\ 42^m\ 34^s$.

February	18	. .	−23	52	36.9

O. ARG. S. 7443, $7^h\ 42^m\ 38^s$.

March	25	. .	−23	56	56.0

(* 9.0), $7^h\ 42^m\ 51^s$.

March	10	. .	−29	49	26.9
	28	. .			25.1

(* 9.5), $7^h\ 43^m\ 1^s$.

February	16	. .	−23	28	49.5

O. ARG. S. 7458, $7^h\ 43^m\ 10^s$.

March	25	. .	−23	56	56.0

(*), $7^h\ 44^m\ 29^s$.

March	4	. .	+ 0	23	48.3

B. A. C. 2590, S. P., $7^h\ 45^m\ 0^s$.

August	26	. .	+79	49	8.3
	28	. .			8.0

B. A. C. 2596, $7^h\ 45^m\ 7^s$.

March	20	. .	+74	15	2.5

(* 9.5), $7^h\ 45^m\ 48^s$.

March	2	. .	+ 0	28	24.8

(* 9.0), $7^h\ 45^m\ 50^s$.

February	20	. .	+ 0	26	47.0
March	2	. .			40.5

WEISSE (2) 1366, $7^h\ 49^m\ 17^s$.

March	13	. .	+20	13	43.8
April	4	. .			45.8

O. ARG. N. 8445, $7^h\ 49^m\ 25^s$.

1874.			°	′	″
March	10	. .	+47	8	44.2

(* 8.5), $7^h\ 51^m\ 10^s$.

February	18	. .	−30	34	37.1

(* 8.5), $7^h\ 51^m\ 28^s$.

February	18	. .	−30	31	59.2

B. A. C. 2655, $7^h\ 52^m\ 39^s$.

February	16	. .	−29	59	49.0

(* 8.5), $7^h\ 52^m\ 50^s$.

March	4	. .	−27	29	54.4
	27	. .			51.5
	28	. .			50.5

(* 9.0), $7^h\ 53^m\ 59^s$.

March	25	. .	−29	59	44.4

O. ARG. S. 7797, $7^h\ 54^m\ 49^s$.

February	20	. .	−30	4	10.1

O. ARG. S. 7798, $7^h\ 54^m\ 57^s$.

February	20	. .	−30	1	56.6

WEISSE (2) 1521, $7^h\ 56^m\ 9^s$.

March	2	. .	+28	8	41.1

B. A. C. 2677, S. P., $8^h\ 0^m\ 5^s$.

August	26	. .	+82	48	53.4
	28	. .			53.6
	31	. .			53.4

WEISSE (2) 1650, $8^h\ 0^m\ 31^s$.

March	10	. .	+20	55	32.4

WEISSE 1661, $8^h\ 1^m\ 9^s$.

March	10	. .	+20	57	45.8

LALANDE 15882, $8^h\ 2^m\ 2^s$.

March	2	. .	+35	49	48.6
	13	. .			46.9

O. ARG. S. 8108, $8^h\ 4^m\ 5^s$.

February	18	. .	−29	57	15.2

ζ CANCRI (1st *), $8^h\ 5^m\ 1^s$.

February	20	. .	+18	1	32.6
March	2	. .			32.8
	25	. .			33.1

ζ CANCRI (2d *), $8^h\ 5^m\ 1^s.5$.

February	20	. .	+18	1	28.2
March	2	. .			27.7
	25	. .			29.0

B. A. C. 2749, S. P., $8^h\ 6^m\ 47^s$.

August	26	. .	+72	47	40.6
	28	. .			41.8
	31	. .			41.7

WEISSE (2) 181, $8^h\ 10^m\ 25^s$.

1874.		° ′ ″
March	4 . .	+31 1 3.7
	13 . .	0.9

(* 9.0), $8^h\ 13^m\ 56^s$.

March	25 . .	−29 45 38.1

(* 8.5), $8^h\ 14^m\ 38^s$.

March	25 . .	−29 47 19.0

LALANDE 16367, $8^h\ 15^m\ 27^s$.

March	2 . .	+27 29 40.3
	27 . .	42.0

WEISSE 381, $8^h\ 16^m\ 12^s$.

March	10 . .	+12 35 21.0
April	2 . .	20.5

ω PUPPIS, $8^h\ 16^m\ 27^s$.

February	20 . .	−32 39 18.9

LALANDE 16413, $8^h\ 17^m\ 2^s$.

March	13 . .	+35 24 59.7
	28 . .	25 2.6

B. A. C. 2824, S. P., $8^h\ 20^m\ 26^s$.

August	28 . .	+69 44 24.0
	31 . .	24.0

(* 8.5), $8^h\ 22^m\ 40^s$.

March	2 . .	−34 36 44.7
	4 . .	46.8

B. A. C. 2830, $8^h\ 23^m\ 35^s$.

March	27 . .	+82 40 45.9
	28 . .	46.2
	30 . .	45.8

WEISSE 601, $8^h\ 24^m\ 35^s$.

April	4 . .	+13 10 26.7

η CANCRI, $8^h\ 25^m\ 28^s$.

February	20 . .	+20 52 3.0

(* 8.0), $8^h\ 26^m\ 59^s$.

March	13 . .	−31 17 9.5

(* 8.0), $8^h\ 27^m\ 56^s$.

March	4 . .	−23 45 19.3

B. A. C. 2885, $8^h\ 28^m\ 3^s$.

March	10 . .	−34 12 20.0

(* 8.0), $8^h\ 28^m\ 32^s$.

March	10 . .	−34 13 9.4

π URSÆ MAJORIS, $8^h\ 29^m\ 12^s$.

March	20 . .	+64 45 54.9
	27 . .	56.8

(* 8.0), $8^h\ 30^m\ 10^s$.

1874.		° ′ ″
April	4 . .	−30 51 7.3

(*), $8^h\ 30^m\ 36^s$.

March	2 . .	+ 7 9 4.4
	28 . .	6.6
April	2 . .	5.9

LALANDE 16960, $8^h\ 30^m\ 51^s$.

March	2 . .	+ 7 9 55.1
	28 . .	57.5
April	2 . .	55.5

O. ARG. S. 8776, $8^h\ 31^m\ 54^s$.

March	30 . .	−23 51 49.1

WEISSE (2) 810, $8^h\ 33^m\ 31^s$.

March	25 . .	+27 32 56.5

B. A. C. 2930, S. P., $8^h\ 37^m\ 0^s$.

September	2 . .	+80 29 48.6

O. ARG. S. 8887, $8^h\ 37^m\ 6^s$.

March	4 . .	−23 45 40.8
	13 . .	41.2

DORPAT 1270 (1st *), $8^h\ 38^m\ 58^s$.

March	2 . .	− 2 8 41.3
April	4 . .	41.2

DORPAT 1270 (2d *), $8^h\ 38^m\ 58^s$.

March	2 . .	− 2 8 40.8
April	4 . .	39.7

LACAILLE 3502, $8^h\ 40^m\ 0^s$.

March	10 . .	−31 47 22.0

WEISSE 1012 (1st *), $8^h\ 40^m\ 20^s$.

March	25 . .	+11 37 22 0
April	2 . .	22.8

WEISSE 1012 (2d *), $8^h\ 40^m\ 20^s$.

March	25 . .	+11 37 8.1
April	2 . .	10.3

LACAILLE 3509, $8^h\ 40^m\ 47^s$.

March	20 . .	−26 9 12.8

LACAILLE 3511, $8^h\ 42^m\ 4^s$.

March	20 . .	−26 10 5.7

6 URSÆ MAJORIS, S. P., $8^h\ 44^m\ 59^s$.

August	28 . .	+65 5 1.9

(* 7.0), $8^h\ 45^m\ 28^s$.

March	13 . .	−35 27 40.9

LACAILLE 3574, $8^h\ 47^m\ 20^s$.

1874.		° ′ ″
March	2 . .	−32 2 9.2
	4 . .	8.5

(* 8.0), $8^h\ 47^m\ 47^s$.

April	4 . .	−32 9 40.8

WEISSE (2) 1222, $8^h\ 48^m\ 21^s$.

March	10 . .	+ 4 37 29.3

WEISSE 1181, $8^h\ 48^m\ 43^s$.

April	2 . .	+22 10 21.2

(* 8.0), $8^h\ 49^m\ 49^s$.

March	20 . .	−35 6 31.6

(* 8.8), $8^h\ 50^m\ 8^s$.

March	25 . .	−32 56 35.5

LACAILLE 3595, $8^h\ 50^m\ 24^s$.

March	25 . .	−32 55 18.1

O. ARG. S. 9154, $8^h\ 50^m\ 25^s$.

March	30 . .	−30 42 31.6

O. ARG. S. 9210, $8^h\ 53^m\ 33^s$.

March	13 . .	−30 45 25.5

LACAILLE 3621, $8^h\ 54^m\ 20^s$.

March	2 . .	−27 19 31.4
	4 . .	29.3

(* 6.5), $8^h\ 57^m\ 18^s$.

March	30 . .	−38 54 28.4
April	2 . .	29.0
	21 . .	28.2

σ^2 URSÆ MAJORIS, $8^h\ 59^m\ 41^s$.

March	28 . .	+67 38 39.4

τ URSÆ MAJORIS, $9^h\ 0^m\ 30^s$.

March	25 . .	+64 1 28.1

(* 8.5), $9^h\ 0^m\ 33^s$.

March	2 . .	+21 30 55.3
April	4 . .	56.8

CARRINGTON 1375, $9^h\ 2^m\ 12^s$.

March	10 . .	+81 54 22.7

WEISSE (2) 87, $9^h\ 6^m\ 17^s$.

March	13 . .	+24 48 36.9
	20 . .	36.4

O. ARG. S. 9450, $9^h\ 6^m\ 27^s$.

March	4 . .	−23 34 59.1

(* 7.5), $9^h\ 10^m\ 27^s$.

1874.		° ′ ″
March	2 . .	−27 40 51.0

a LYNCIS, $9^h\ 13^m\ 29^s$.

March	25 . .	+34 55 25.6
	28 . .	27.6
April	4 . .	26.2

(* 9.0), $9^h\ 14^m\ 46^s$.

March	4 . .	−28 43 36.5
	10 . .	33.1
	13 . .	36.4

(* 8.0). $9^h\ 14^m\ 59^s$.

April	2 . .	−28 35 35.9

O. ARG. S. 9615, $9^h\ 15^m\ 17^s$.

March	4 . .	−28 41 9.6
	13 . .	10.8
	30 . .	12.0
April	2 . .	12.3

(*), $9^h\ 17^m\ 45^s$.

March	4 . .	−28 45 5.3

(* 6.0), $9^h\ 17^m\ 47^s$.

April	21 . .	−34 58 55.2

1 DRACONIS H, S. P., $9^h\ 19^m\ 4^s$.

September	26 . .	+81 52 51.5
October	1 . .	47.8
	10 . .	49.5

h URSÆ MAJORIS, $9^h\ 21^m\ 36^s$.

March	25 . .	+63 36 40.4
	28 . .	41.3

d URSÆ MAJORIS, $9^h\ 23^m\ 20^s$.

March	30 . .	+70 22 57.7
April	4 . .	55.5

ζ^1 ANTLIÆ (1st *), $9^h\ 25^m\ 23^s$.

March	13 . .	−31 20 17.2

ζ^1 ANTLIÆ, (2d *), $9^h\ 25^m\ 23^s$.

March	13 . .	−31 20 8.6

ζ^2 ANTLIÆ, $9^h\ 26^m\ 11^s$.

March	13 . .	−31 19 2.7

(* 7.5), $9^h\ 26^m\ 19^s$.

March	10 . .	−36 11 45.1

LACAILLE 3905, $9^h\ 28^m\ 15^s$.

March	20 . .	−38 4 49.7

B. A. C. 3275, $9^h\ 31^m\ 13^s$.

March	28 . .	+78 42 25.8
	30 . .	24.6
April	2 . .	25.2

B. A. C. 3284, $9^h\ 32^m\ 12^s$.

1874.			°	′	″
March	25	. .	+79	42	43.1

28 URSÆ MAJORIS, $9^h\ 36^m\ 11^s$.

April	2	. .	+64	13	53.9

(* 7.0), $9^h\ 40^m\ 42^s$.

March	13	. .	+12	8	59.7

WEISSE (2) 960, $9^h\ 46^m\ 26^s$.

April	4	. .	+17	59	54.7

LALANDE 4065, $9^h\ 49^m\ 8^s$.

March	13	. .	−34	18	43.4

WEISSE (2) 1038, $9^h\ 50^m\ 2^s$.

March	20	. .	+29	9	33.0
April	29	. .			30.0

O. ARG. S. 10227, $9^h\ 50^m\ 27^s$.

April	21	. .	−27	54	16.3

O. ARG. S. 10241, $9^h\ 51^m\ 17^s$.

April	21	. .	−27	56	29.0

η LEONIS, $10^h\ 0^m\ 30^s$.

March	20	. .	+17	22	35.4
	25	. .			33.7

WEISSE (2) 1316, $10^h\ 2^m\ 23^s$.

April	2	. .	+20	56	56.9

(* 8.5), $10^h\ 4^m\ 25^s$.

April	4	. .	−36	5	5.2

(*), $10^h\ 6^m\ 43^s$.

April	21	. .	−37	32	44.9

LACAILLE 4183, $10^h\ 6^m\ 20^s$.

March	20	. .	−27	59	3.2

32 URSÆ MAJORIS, $10^h\ 8^m\ 54^s$.

March	28	. .	+65	44	10.4
October	28 (S. P.)				9.7

RUMKER 3113, $10^h\ 10^m\ 28^s$.

April	2	. .	+12	17	43.8

(* 7.5), $10^h\ 14^m\ 37^s$.

April	4	. .	−23	0	24.2

LACAILLE 4257, $10^h\ 15^m\ 31^s$.

March	20	. .	−24	44	18.0
	30	. .			19.8

LALANDE 20114, $10^h\ 15^m\ 33^s$.

March	25	. .	−23	4	40.3

(* 9.0), $10^h\ 16^m\ 0^s$.

1874.			°	′	″
March	28	. .	+ 2	6	10.3

(* 8.5), $10^h\ 22^m\ 31^s$.

March	25	. .	+64	56	36.0
April	2	. .			38.0

(* 7.8), $10^h\ 22^m\ 38^s$.

March	20	. .	−35	34	35.1
	30	. .			32.6

WEISSE 468, $10^h\ 27^m\ 53^s$.

April	21	. .	+12	49	52.6

B. A. C. 3630, $10^h\ 29^m\ 38$.

April	29	. .	−38	54	42.1

38 LEONIS MINORIS, $10^h\ 31^m\ 56^s$.

April	2	. .	+38	33	59.2
	4	. .			57.5

LACAILLE 4437, $10^h\ 38^m\ 54^s$.

April	2	. .	−36	16	7.3
	4	. .			8.0
	21	. .			7.7

WEISSE (2) 776, $10^h\ 39^m\ 6^s$.

April	29	. .	+36	18	1.9

O. ARG. S. 10952, $10^h\ 47^m\ 18^s$.

April	27	. .	−29	25	32.3

WEISSE (2) 944, $10^h\ 47^m\ 42^s$.

April	21	. .	+37	25	50.5

LALANDE 21014, $10^h\ 49^m\ 34^s$.

April	4	. .	+23	55	26.4

WEISSE 957, $10^h\ 54^m\ 8^s$.

April	21	. .	+ 4	24	56.6

LALANDE 21185, $10^h\ 56^m\ 21^s$.

March	30	. .	+36	48	48.6
April	4	. .			49.5

(* 7.3), $11^h\ 1^m\ 13^s$.

April	21	. .	−32	52	25.6

(* 8.0), $11^h\ 2^m\ 5^s$.

April	29	. .	−40	15	12.0

LACAILLE 4646, $11^h\ 7^m\ 14^s$.

March	30	. .	−25	46	49.4
April	4	. .			48.9

(* 8.5), $11^h\ 9^m\ 17^s$.

April	21	. .	+59	22	19.5

B. A. C. 3864, $11^h\ 15^m\ 34^s$.

1874.			°	′	″
May	19	. .	+65	1	10.9

WEISSE (2) 266, $11^h\ 15^m\ 43^s$.

April	4	. .	+35	43	0.0

RUMKER 3575, $11^h\ 19^m\ 59^s$.

April	21	. .	+18	33	0.1

B. A. C. 3906, $11^h\ 22^m\ 58^s$.

May	19	. .	+81	49	14.7

LACAILLE 4758, $11^h\ 23^m\ 24^s$.

March	30	. .	−27	20	11.1
April	4	. .			10.6

λ DRACONIS, $11^h\ 23^m\ 59^s$.

May	11	. .	+70	1	35.4
	21	. .			34.3

B. A. C. 3917, $11^h\ 24^m\ 56^s$.

April	29	. .	+ 3	45	27.4

2 DRACONIS, $11^h\ 28^m\ 38^s$.

May	11	. .	+70	1	26.8
	18	. .			26.2
	21	. .			25.7

WEISSE 495, $11^h\ 29^m\ 37^s$.

April	21	. .	+ 8	2	44.9

3 DRACONIS, $11^h\ 35^m\ 27^s$.

May	19	. .	+67	26	30.5
	21	. .			31.5

LACAILLE 4867, $11^h\ 37^m\ 42^s$.

April	21	. .	−29	2	57.2
	29	. .			59.1

B. A. C. 4015, $11^h\ 46^m\ 34^s$.

April	21	. .	−33	12	26.8
	29	. .			25.6

B. A. C. 4036, $11^h\ 50^m\ 20^s$.

May	18	. .	+62	15	6.6
	19	. .			5.0
	21	. .			5.8

B. A. C. 4050, $11^h\ 54^m\ 0^s$.

May	22	. .	+81	33	21.4

B. A. C. 4070, $11^h\ 58^m\ 28^s$.

May	18	. .	+86	17	8.6

WEISSE (2) 1190, $12^h\ 0^m\ 58^s$.

April	29	. .	+37	42	58.4

DORPAT 1604 (1st *), $12^h\ 2^m\ 58^s$.

May	21	. .	−11	8	59.9

DORPAT 1604 (2d *), $12^h\ 3^m\ 1^s$.

1874.			°	′	″
May	21	. .	−11	9	3.1

(* 7.0), $12^h\ 8^m\ 37^s$.

May	22	. .	−28	32	8.8

B. A. C. 4128, $12^h\ 10^m\ 12^s$.

April	21	. .	+33	45	56.5
May	19	. .			55.6

B. A. C. 4150, $12^h\ 13^m\ 12^s$.

May	11	. .	+87	8	11.0

(* 7.5), $12^h\ 13^m\ 34^s$.

April	29	. .	−27	49	28.2
May	26	. .			27.9

WEISSE 199, $12^h\ 13^m\ 47^s$.

May	21	. .	+ 6	27	4.0

B. A. C. 4165, $12^h\ 14^m\ 27^s$.

May	18	. .	+88	23	53.7
November	14 (S. P.)				54.8
	16 (S. P.)				53.3
December	4 (S. P.)				55.0
	5 (S. P.)				54.7

(* 8.5), $12^h\ 16^m\ 1^s$.

May	22	. .	−32	51	41.1

B. A. C. 4193, $12^h\ 19^m\ 55^s$.

December	18	. .	+84	7	37.4

4 DRACONIS, S. P., $12^h\ 24^m\ 37^s$.

November	14	. .	+69	53	56.9
	16	. .			58.6
December	19	. .			58.5
	29	. .			58.6

O. ARG. S. 12219, $12^h\ 25^m\ 0^s$.

April	29	. .	−30	17	8.1
May	19	. .			5.1

(* 8.5), $12^h\ 26^m\ 52^s$.

May	22	. .	−31	45	28.1

WEISSE (2) 556, $12^h\ 27^m\ 17^s$.

May	21	. .	+24	58	44.9

O. ARG. S. 12254, $12^h\ 28^m\ 27^s$.

May	26	. .	−22	46	49.1

6 DRACONIS, S. P., $12^h\ 29^m\ 27^s$.

November	25	. .	+70	42	58.6
	26	. .			59.1
December	18	. .			59.6

O. ARG. S. 12238, $12^h\ 34^m\ 34^s$.

April	29	. .	−27	12	57.4
May	19	. .			57.8

LALANDE 23711, $12^h\ 36^m\ 14^s$.

1874.			° ′ ″
May	22 . .	+34 23	1.3
	26 . .		2.2

7 DRACONIS, $12^h\ 42^m\ 27^s$.

May	18 . .	+67 28	42.7

LALANDE 23896, $12^h\ 42^m\ 30^s$.

April	29 . .	+37 1	50.2
May	19 . .		50.4

(* 8.5), $12^h\ 42^m\ 36^s$.

May	30 . .	+18 25	32.8

LALANDE 23919, $12^h\ 43^m\ 17^s$.

May	22 . .	+36 0	31.7

O. ARG. S. 12444, $12^h\ 43^m\ 23^s$.

May	26 . .	−25 10	32.0

(* 8.5), $12^h\ 45^m\ 52^s$.

June	1 . .	−38 37	31.3

32 CAMELOPARDI (1st *), $12^h\ 48^m\ 7^s$.

May	8 . .	+84 6	11.7
	18 . .		11.3
	19 . .		10.2
	21 . .		10.6

32 CAMELOPARDI (2d *), $12^h\ 48^m\ 15^s$.

May	8 . .	+84 5	52.4
	18 . .		53.2
	19 . .		52.8
	21 . .		52.7

LACAILLE 5342, $12^h\ 51^m\ 3^s$.

April	29 . .	−38 14	5.9
May	22 . .		5.9

(* 8.0), $12^h\ 53^m\ 40^s$.

May	11 . .	+69 23	13.3
	30 . .		15.2

LALANDE 24271, $12^h\ 56^m\ 30^s$.

May	21 . .	+38 1	31.4
June	4 . .		33.0

(* 8.2), $12^h\ 57^m\ 25^s$.

May	26 . .	−16 56	30.5

WEISSE 1038, $13^h\ 1^m\ 18^s$.

May	18 . .	+12 56	53.7

O. ARG. S. 12687, $13^h\ 3^m\ 34^s$.

April	29 . .	−23 11	21.0
May	19 . .		21.4

LALANDE 24615, $13^h\ 9^m\ 22^s$.

April	29 . .	+36 6	46.5
May	18 . .		46.0

(*), $13^h\ 11^m\ 28^s$.

1874.			° ′ ″
May	8 . .	+33 9	20.7
	11 . .		21.4

(* 8.5), $13^h\ 14^m\ 9^s$.

May	19 . .	+12 54	41.1

(* 8.8), $13^h\ 14^m\ 23^s$.

June	1 . .	+38 28	30.1

WEISSE 225, $13^h\ 15^m\ 1^s$.

May	21 . .	− 3 26	28.2

WEISSE 235, $13^h\ 15^m\ 41^s$.

May	28 . .	− 4 0	7.3
	30 . .		6.4

B. A. C. 4498, S. P., $13^h\ 19^m\ 48^s$.

January	8 . .	+85 24	52.0

(* 8.5), $13^h\ 21^m\ 30^s$.

May	26 . .	−32 49	36.1

B. A. C. 4506, S. P., $13^h\ 22^m\ 55^s$.

January	16 . .	+73 2	47.1
November	26 . .		46.2

WEISSE (2) 437, $13^h\ 23^m\ 25^s$.

May	8 . .	+36 57	49.9
	19 . .		49.6

LACAILLE 5573, $13^h\ 24^m\ 35^s$.

May	21 . .	−27 27	43.5
	22 . .		43.2

B. A. C. 4527, S. P., $13^h\ 25^m\ 55^s$.

November	7 . .	+79 17	41.2

(* 9.0), $13^h\ 29^m\ 2^s$.

May	18 . .	+ 7 12	23.5

WEISSE 566, $13^h\ 33^m\ 55^s$.

May	30 . .	− 8 0	18.4

B. A. C. 4560, $13^h\ 34^m\ 20^s$.

May	22 . .	−12 8	34.5

LACAILLE 5649, $13^h\ 35^m\ 8^s$.

May	8 . .	−33 20	(38.2)
	26 . .		35.6
June	1 . .		(32.1)
	4 . .		35.0

i CENTAURI, $13^h\ 38^m\ 33^s$.

April	29 . .	−32 24	20.1
May	21 . .		19.1

WEISSE (2) 814, $13^h\ 39^m\ 26^s$.

June	4 . .	+22 25	13.5

B. A. C. 4593, $13^h\ 40^m\ 53^s$.

1874.			° ′ ″
May	11 . .	− 6 4	26.3

WEISSE (2) 854, $13^h\ 41^m\ 36^s$.

May	18 . .	+33 56	21.5

n VIRGINIS, $13^h\ 41^m\ 43^s$.

May	8 . .	− 6 12	28.0

LACAILLE 5699, $13^h\ 43^m\ 12^s$.

May	30 . .	−30 26	21.1

WEISSE (2) 894, $13^h\ 43^m\ 14^s$.

June	1 . .	+22 54	47.7

B. A. C. 4613, $13^h\ 43^m\ 22^s$.

June	9 . .	−20 14	29.1
	12 . .		30.3

WEISSE (2) 910, $13^h\ 43^m\ 46^s$.

May	26 . .	+34 22	11.4

RUMKER 4483, $13^h\ 44^m\ 47^s$.

April	29 . .	+12 12	19.2

WEISSE 976, $13^h\ 47^m\ 7^s$.

May	22 . .	+38 21	20.5

WEISSE 794, $13^h\ 47^m\ 36^s$.

June	4 . .	+13 18	16.3

i DRACONIS, $13^h\ 47^m\ 48^s$, S. P.

January	8 . .	+65 20	46.3

(* 8.0), $13^h\ 49^m\ 25^s$.

May	22 . .	−37 46	42.3

RUMKER 4522, $13^h\ 50^m\ 24^s$.

May	8 . .	+26 32	10.8

(* 9.0), $13^h\ 51^m\ 29^s$.

June	1 . .	−36 44	57.4

(*), $13^h\ 51^m\ 33^s$.

May	6 . .	−37 9	54.2

(* 8.5), $13^h\ 52^m\ 54^s$.

May	30 . .	−36 47	2.9
June	1 . .		46 53.3

(* 8.8), $13^h\ 53^m\ 30^s$.

May	26 . .	+23 28	59.3

WEISSE (2) 1167, $13^h\ 53^m\ 51^s$.

June	12 . .	+23 32	45.2

(* 7.0), $13^h\ 54^m\ 57^s$.

1874.			° ′ ″
April	29 . .	−35 34	8.6

WEISSE 942, $13^h\ 55^m\ 39^s$.

June	4 . .	+ 2 9	47.8

(* 8.0), $13^h\ 56^m\ 35^s$.

June	9 . .	−37 9	52.2

α DRACONIS, $14^h\ 0^m\ 59^s$.

May	18 . .	+64 58	44.5
	22 . .		44.7
	26 . .		.4

WEISSE (2) 21, $14^h\ 2^m\ 53^s$.

May	8 . .	+37 20	(54.1)
June	9 . .		58.6
	12 . .		57.9

B. A. C. 4714, $14^h\ 5^m\ 48^s$.

May	11 . .	+32 53	18.9
	21 . .		20.4
	30 . .		20.6

LACAILLE 5872, $14^h\ 8^m\ 53^s$.

May	6 . .	−32 39	13.6

(* 8.0), $14^h\ 10^m\ 26^s$.

May	8 . .	+35 10	8.9
	18 . .		11.2

LACAILLE 5883, $14^h\ 10^m\ 59^s$.

May	6 . .	−32 38	6.3

O. ARG. N. 14432, $14^h\ 11^m\ 46^s$.

May	11 . .	+51 57	31.5
	22 . .		29.8

O. ARG. S. 13584, $14^h\ 17^m\ 0^s$.

May	30 . .	−19 13	29.3

O. ARG. S. 13589, $14^h\ 17^m\ 5^s$.

June	4 . .	−19 10	27.6
	9 . .		27.2

(* 7.0), $14^h\ 17^m\ 57^s$.

June	17 . .	−11 5	46.4

WEISSE 316, $14^h\ 18^m\ 35^s$.

May	6 . .	−13 30	53.0

SCHWERD 835, $14^h\ 18^m\ 37^s$.

June	12 . .	+79 54	58.2

5 URSÆ MINORIS, $14^h\ 27^m\ 48^s$.

May	11 . .	+76 15	22.1
	18 . .		23.5
	21 . .		23.2
	22 . .		22.5
	26 . .		22.9
June	4 . .		23.3

B. A. C. 4816, 14h 28m 12s.

1874.				°	′	″
May	6	. .	+37	31	2.3	
	8	. .			0.7	

WEISSE (2) 752, 14h 35m 58s.

May	6	. .	+38	41	8.5
	8	. .			6.0

WEISSE (2) 788, 14h 37m 30s.

May	26	. .	+37	17	40.2
	30	. .			41.6

ε BOOTIS (1st *), 14h 39m 29s.

June	22	. .	+27	36	30.3

LALANDE 26293, 14h 39m 59s.

June	17	. .	+33	19	23.6

(*) 14h 40m 59s.

June	19	. .	+37	25	26.6

LACAILLE 6109, 14h 42m 15s.

June	9	. .	−31	53	56.6
	12	. .			57.9

WEISSE (2) 932, 14h 43m 59s.

May	26	. .	+36	34	31.5

WEISSE (2) 936, 14h 44m 0s.

May	6	. .	+36	35	43.0
	26	. .			43.2

(* 8.5), 14h 44m 50s.

May	18	. .	+37	7	2.2
	21	. .			1.2

β URSÆ MINORIS, 14h 51m 5s.

May	18	. .	+74	40	14.7
	21	. .			14.5
	26	. .			14.3
	30	. .			14.4
June	1	. .			13.0

O. ARG. N. 14996, 14h 53m 21s.

May	6	. .	+59	53	13.1
June	4	. .			13.2

O. ARG. S. 14257, 14h 59m 44s.

June	1	. .	−29	0	49.4
	9	. .			49.6

WEISSE 1110, 15h 0m 3s.

June	17	. .	− 1	50	47.6
	22	. .			44.1

LALANDE 27803, 15h 8m 37s.

May	6	. .	+35	21	13.5
	8	. .			11.8

O. ARG. S. 14435, 15h 11m 6s.

May	18	. .	−30	21	36.3
	21	. .			(42.3)

O. ARG. N. 15259, 15h 11m 50s, S. P.

1874.				°	′	″
February	4	. .	+67	19	36.5	

(* 8.8), 15h 13m 15s.

June	17	. .	−37	8	45.2

WEISSE 210, 15h 13m 23s.

June	1	. .	−13	30	(34.5)
	4	. .			28.4
	9	. .			30.8
	12	. .			27.4

(* 7.5), 15h 14m 6s.

May	30	. .	−37	10	44.7

LALANDE 27996, 15h 14m 33s.

June	19	. .	+38	14	41.1

O. ARG. S. 14187, 15h 14m 50s.

May	6	. .	−29	55	27.6

11 URSÆ MINORIS, 15h 17m 12s.

May	8	. .	+72	16	53.2
	11	. .			52.5

(* 7.5), 15h 17m 17s.

June	22	. .	+55	46	39.5

B. A. C. 5140, 15h 18m 28s.

February	4	. .	+87	42	49.3
	10	. .			48.2
December	19 (S. P.)				48.8
	31 (S. P.)				50.9

(* 8.5), 15h 19m 29s.

June	29	. .	+38	19	41.2

RUMKER 5072, 15h 19m 31s.

June	17	. .	+38	38	16.0
	19	. .			16.1

γ^2 URSÆ MAJORIS, 15h 20m 56s.

May	8	. .	+72	16	57.0
	11	. .			57.3
	18	. .			56.9
	21	. .			55.0
	26	. .			56.6
	30	. .			57.2
June	1	. .			57.1

B. A. C. 5117, 15h 26m 26s.

May	6	. .	−24	40	57.8

LALANDE 28317, 15h 26m 40s.

June	4	. .	+37	2	51.0
	9	. .			53.2

(* 8.7), 15h 27m 22s.

June	17	. .	−31	59	19.0
	19	. .			25.3

LALANDE 28391, 15h 28m 31s.

June	12	. .	+27	7	54.5
	22	. .			48.1

(* 8.8), 15h 31m 46s.

May	30	. .	−36	1	27.3
June	1	. .			(22.5)

WEISSE 862, 15h 35m 46s.

May	6	. .	+37	55	30.3

(* 8.2), 15h 39m 49s.

May	26	. .	+37	55	55.7

LALANDE 28799, 15h 41m 41s.

June	17	. .	+36	50	36.3
	22	. .			35.6

LALANDE 28801, 15h 41m 42s.

June	17	. .	+36	50	10.6
	22	. .			10.2

LACAILLE 6541, 15h 41m 48s.

May	30	. .	−32	25	8.6
June	1	. .			8.7

RADCLIFFE 3448, 15h 41m 54s.

June	4	. .	+42	51	38.7
	9	. .			41.3

B. A. C. 5140, S. P., 15h 18m 7s.

December	19	. .	+87	42	48.8

LALANDE 28834, 15h 42m 40s.

May	6	. .	+37	34	21.0

LALANDE 28917, 15h 45m 59s.

June	22	. .	+38	12	59.0
	24	. .		13	3.8

A SCORPII, 15h 46m 5s.

July	3	. .	−24	56	53.7

18 URSÆ MINORIS, S. P., 15h 46m 37s.

February	16	. .	+80	21	34.3

ζ URSÆ MINORIS, 15h 48m 35s.

May	30	. .	+78	10	52.7
June	1	. .			51.6
	4	. .			51.9
	9	. .			52.1

WEISSE (2) 1336, 15h 53m 44s.

May	6	. .	+37	34	31.4
June	17	. .			28.7

LALANDE 29146, 15h 53m 50s.

June	12	. .	+38	11	22.9
	19	. .			19.7

WEISSE (2) 1367, 15h 54m 24s.

June	24	. .	+37	18	10.5
	26	. .			8.3

B. A. C. 5352, 15h 56m 34s.

1874.				°	′	″
May	30	. .	+83	19	28.0	
June	1	. .			28.6	

WEISSE 1081, 15h 57m 59s.

May	6	. .	+ 6	24	6.6
June	22	. .			10.5

WEISSE 1086, 15h 58m 9s.

May	6	. .	+ 6	21	31.7

LALANDE 29341, 15h 59m 30s.

June	4	. .	+34	31	27.0
	17	. .			26.4

LACAILLE 6716, 16h 2m 37s.

June	29	. .	−39	47	29.3
July	3	. .			32.4

(* 8.0), 16h 3m 36s.

June	19	. .	−26	44	54.9

B. A. C. 5373, 16h 3m 53s.

June	26	. .	−26	49	10.6

GROOMBRIDGE 2320, 16h 5m 59s.

June	1	. .	+68	8	32.2
	4	. .			32.1
	9	. .			33.3
	12	. .			32.7

B. A. C. 5411, 16h 7m 12s.

July	8	. .	+36	45	5.8
	17	. .			6.5

LALANDE 29654, 16h 8m 44s.

May	6	. .	+38	23	36.0

(* 8.5), 16h 12m 5s.

July	3	. .	+37	11	18.0

(* 8.3), 16h 13m 2s.

July	6	. .	+37	13	51.6

(* 8.5), 16h 13m 23s.

July	14	. .	+37	45	20.9

(* 6.0), 16h 13m 26s.

June	1	. .	−23	51	46.9
	4	. .			46.6

WEISSE (2) 616, 16h 21m 0s.

May	6	. .	+38	11	57.6
June	9	. .			56.5

η URSÆ MAJORIS, 16h 21m 18s, S. P.

February	4	. .	+76	2	40.7

η DRACONIS, 16h 22m 21s.

June	1	. .	+61	47	59.9
	4	. .			59.5

O. ARG. S. 15671, 16h 22m 23s.

1874.			°	′	″
June	12	. .	−24	52	0.8
	17	. .			1.6

A DRACONIS, 16h 28m 14s.

June	4	. .	+69	2	25.9
	9	. .			28.0
	12	. .			26.7
	17	. .			24.1
	22	. .			23.4

WEISSE (2) 889, 16h 29m 34s.

May	6	. .	+35	45	49.0
June	24	. .			47.1

O. ARG. S. 15847, 16h 34m 30s.

July	18	. .	−24	34	21.4

(* 7.8), 16h 35m 24s.

June	24	. .	+38	26	45.4
July	8	. .			46.8

LALANDE 30419, 16h 35m 50s.

May	6	. .	+37	36	7.5

B. A. C. 5600, 16h 36m 27s.

July	3	. .	−27	12	58.8
	6	. .		13	1.5

O. ARG. S. 15896, 16h 37m 4s.

July	6	. .	−27	13	4.8

(* 9.0), 16h 43m 45s.

May	6	. .	−30	9	16.5

(* 7.0), 16h 46m 37s.

June	17	. .	−38	12	13.5

(* 9.0), 16h 47m 47s.

June	22	. .	−37	3	25.6

(* 8.0), 16h 48m 11s.

June	29	. .	−31	18	47.2
July	18	. .			43.5

B. A. C. 5705, 16h 48m 42s.

February	26 (S. P.)		+77	43	47.3
March	2 (S. P.)				45.4
June	4	. .			47.8
	9	. .			48.6

B. A. C. 5700 (1st *), 16h 49m 41s.

July	3	. .	−19	20	17.2
	6	. .			22.0

(* 9.0), 16h 50m 10s.

June	26	. .	−30	0	58.0
July	8	. .			54.4

LALANDE 30851, 16h 50m 39s.

May	6	. .	+37	31	25.3
June	24	. .			25.3

WEISSE 1033, 16h 55m 36s.

1874.			°	′	″
June	29	. .	− 9	5	54.9

(*), 16h 57m 44s.

July	3	. .	−25	17	57.6

LALANDE 31055, 16h 58m 32s.

June	26	. .	− 4	51	1.1

ε URSÆ MINORIS, 16h 58m 54s.

May	6	. .	+82	14	29.2
June	4	. .			27.6
	9	. .			28.9
	12	. .			27.9
	22	. .			27.0
	24	. .			28.4

(* 9.0), 17h 5m 32s.

July	3	. .	−35	8	58.4
	6	. .			53.5

O. ARK. S. 16680, 17h 15m 4s.

June	17	. .	−22	34	27.5
	29	. .			26.7
July	6	. .			31.2
	8	. .			(41.2)
	14	. .			31.2

B. A. C. 5887, 17h 18m 10s.

June	22	. .	+71	55	21.0
	24	. .			22.2
	26	. .			19.7
July	3	. .			22.6

LALANDE 31790, 17h 20m 50s.

July	8	. .	+37	17	25.2

LACAILLE 7324, 17h 23m 26s.

June	29	. .	−33	36	9.1

(* 8.8), 17h 23m 30s.

July	3	. .	−31	46	25.9

O. ARG. S. 16952, 17h 27m 13s.

July	14	. .	−18	7	53.4

WEISSE (2) 831, 17h 28m 1s.

July	8	. .	+35	51	49.6

(* 8.0), 17h 29m 8s.

June	26	. .	−35	15	5.6
July	18	. .			1.6

(* 9.0), 17h 30m 19s.

July	6	. .	−20	35	20.2

(* 9.0), 17h 31m 13s.

June	29	. .	−32	7	45.9

(* 7.5), 17h 31m 44s.

June	29	. .	−32	8	35.2

f DRACONIS, 17h 32m 28s.

1874.			°	′	″
June	24	. .	+68	12	53.6

(* 9.0), 17h 32m 20s.

July	3	. .	−35	4	54.5

(* 7.0), 17h 35m 3s.

July	8	. .	−35	14	4.0

LALANDE 32322, 17h 35m 24s.

July	18	. .	+37	16	55.3

O. ARG. S. 17133, 17h 36m 51s.

July	14	. .	−21	40	15.4

ω DRACONIS, 17h 37m 41s.

June	26	. .	+68	48	55.6
August	26	. .			57.7
	28	. .			56.9
	31	. .			57.3

(* 8.3), 17h 37m 40s.

July	6	. .	−21	39	8.9
	14	. .			5.7

(* 7.5), 17h 39m 5s.

June	22	. .	−34	49	51.0

LACAILLE 7435, 17h 39m 48s.

June	17	. .	−35	50	44.2

(* 7.5), 17h 39m 54s.

July	3	. .	−34	31	56.3

LALANDE 32418, 17h 40m 1s.

June	24	. .	−25	8	17.4

WEISSE (2) 1394, 17h 43m 34s.

July	8	. .	+36	9	30.6

WEISSE (2) 1398, 17h 43m 40s.

July	8	. .	+36	11	41.5

LALANDE 32631, 17h 43m 58s.

July	18	. .	+38	16	45.8

ψ^1 DRACONIS, 17h 44m 10s.

August	26	. .	+72	12	36.5
	28	. .			35.7
	31	. .			35.4

ψ^2 DRACONIS, 17h 44m 12s.

August	26	. .	+72	13	6.5

LACAILLE 7464, 17h 44m 29s.

July	29	. .	−34	59	0.1

(* 7.6), 17h 44m 50s.

1874.			°	′	″
July	29	. .	−34	58	57.8

LACAILLE 6038, 17h 45m 0s.

June	26	. .	−34	51	42.7

(* 8.0), 17h 45m 9s.

July	6	. .	−34	39	32.7

(* 8.5), 17h 45m 38s.

July	14	. .	−34	28	40.3

(* 7.7), 17h 45m 58s.

July	6	. .	−34	41	50.1

B. A. C. 6046, 17h 46m 6s.

July	14	. .	−34	26	11.6

(* 7.5), 17h 46m 39s.

July	3	. .	+37	44	33.1

(*), 17h 47m 9s.

June	24	. .	−29	47	0.6

WEISSE 929, 17h 47m 36s.

June	22	. .	+ 8	40	51.3

(* 8.5), 17h 53m 6s.

July	18	. .	+ 0	2	2.0

(* 7.6), 17h 53m 42s.

July	8	. .	−36	21	10.8

(* 8.5), 17h 53m 58s.

June	29	. .	−24	9	0.5

O. S. 17503, 17h 54m 38s.

July	6	. .	−15	38	44.9

35 DRACONIS, 17h 55m 4s.

August	28	. .	+76	58	40.0
	31	. .			39.3

(* 9.0), 17h 57m 12s.

July	3	. .	−23	36	4.8

(* 8.3), 17h 57m 32s.

July	14	. .	−37	26	16.3

(* 9.0), 17h 58m 31s.

June	22	. .	−36	36	57.4

(* 8.0), 18h 2m 20s.

August	26	. .	+ 2	23	39.9

WEISSE (2) 44, 18h 2m 44s.

July	8	. .	+36	24	19.6
August	28	.			18.2

DORPAT 2288, $18^h\ 4^m\ 6^s$.

1874.			°	′	″
August	31	. .	+ 2	30	28.3

(* 8.0), $18^h\ 5^m\ 4^s$.

July	6	. .	+36	29	46.2

(* 8.3), $18^h\ 7^m\ 21^s$.

June	22	. .	+37	41	21.7

(*), $18^h\ 8^m\ 48^s$.

July	8	. .	+35	9	46.9

40 DRACONIS, $18^h\ 9^m\ 26^s$.

February	10 (S. P.)		+79	58	55.4
August	26	. .			53.9

(* 8.8), $18^h\ 9^m\ 29^s$.

July	3	. .	−31	7	38.6

41 DRACONIS, $18^h\ 9^m\ 31^s$.

February	10 (S. P.)		+79	59	6.6
August	26	. .			5.7

LALANDE 33692, $18^h\ 10^m\ 37^s$.

July	6	. .	+37	22	20.7
September	9	. .			23.2

(* 9.0), $18^h\ 12^m\ 17^s$.

June	29	. .	+36	58	55.0
July	14	. .			54.6

δ URSÆ MINORIS, $18^h\ 12^m\ 47^s$.

August	28	. .	+86	36	25.3

(* 8.8), $18^h\ 16^m\ 25^s$.

July	6	. .	−29	35	14.1

(* 8.8), $18^h\ 16^m\ 46^s$.

July	6	. .	−29	36	41.7

LALANDE 33952, $18^h\ 16^m\ 55^s$.

June	26	. .	+36	52	52.3

24 URSÆ MINORIS, S. P., $18^h\ 17^m\ 6^s$.

March	4	. .	+86	59	9.9
	10	. .			10.2

(* 7.0), $18^h\ 17^m\ 51^s$.

July	3	. .	+36	14	35.9

LALANDE 33997, $18^h\ 18^m\ 5^s$.

August	31	. .	+36	50	25.4

(*), $18^h\ 22^m\ 32^s$.

July	14	. .	+35	57	11.0

(*), $18^h\ 22^m\ 30^s$.

July	14	. .	+35	59	52.8
August	28	. .			53.4

(* 8.3), $18^h\ 25^m\ 7^s$.

1874.			°	′	″
August	26	. .	−36	51	17.7
	31	. .			20.6

(* 7.5), $18^h\ 25^m\ 14^s$.

July	6	. .	−36	53	43.2
August	26	. .			41.1

(*), $18^h\ 28^m\ 33^s$.

July	18	. .	+37	20	14.1

LALANDE 34581, $18^h\ 31^m\ 54^s$.

July	14	. .	+37	55	51.5
August	28	. .			51.9

(* 7.5), $18^h\ 33^m\ 15^s$.

June	26	. .	+37	40	17.1

B. A. C. 6375, S. P., $18^h\ 35^m\ 46^s$.

March	20	. .	+77	26	49.2

B. A. C. 6376, $18^h\ 38^m\ 38^s$.

July	18	. .	−19	44	3.7
August	31	. .			5.9

LACAILLE 7846, $18^h\ 39^m\ 11^s$.

September	9	. .	−40	32	14.1

LACAILLE 7858, $18^h\ 39^m\ 52^s$.

September	12	. .	−37	8	51.7

B. A. C. 6469, S. P., $18^h\ 48^m\ 50^s$.

March	20	. .	+73	56	19.7

50 DRACONIS, $18^h\ 50^m\ 24^s$.

July	18	. .	+75	17	3.1

(* 8.0), $19^h\ 0^m\ 23^s$.

August	31	. .	−21	58	20.3

LALANDE 35802, $19^h\ 0^m\ 32^s$.

September	12	. .	+38	33	11.2

LAMONT 6597, $19^h\ 0^m\ 43^s$.

September	22	. .	−	0	51 28.6

O. ARG. S. 19104, $19^h\ 0^m\ 44^s$.

September	26	. .	−21	59	1.2

LALANDE 35866, $19^h\ 2^m\ 6^s$.

September	24	. .	+37	11	38.4

(* 8.0), $19^h\ 2^m\ 15^s$.

September	23	. .	−10	2	44.5

LALANDE 36002, $19^h\ 4^m\ 20^s$.

September	9	. .	+38	18	30.1

LALANDE 36051, $19^h\ 5^m\ 25^s$.

1874.			°	′	″
August	28	. .	+37	35	28.2
October	1	. .			29.0

LALANDE 36238, $19^h\ 9^m\ 24^s$.

August	31	. .	+36	12	31.6
September	5	. .			28.1

WEISSE 187, $19^h\ 9^m\ 30^s$.

September	19	. .	−	8	54 31.8

LALANDE 36402, $19^h\ 12^m\ 48^s$.

September	9	. .	+38	48	10.2

LALANDE 36513, $19^h\ 15^m\ 12^s$.

September	12	. .	+37	6	13.9
	22	. .			16.3
	26	. .			14.9

(* 8.5), $19^h\ 17^m\ 18^s$.

September	23	. .	−34	31	40.6
	24	. .			38.6

τ DRACONIS, $19^h\ 17^m\ 57^s$.

August	31	. .	+73	7	15.0

LALANDE 36729, $19^h\ 19^m\ 51^s$.

September	5	. .	+38	58	2.5
	19	. .			4.4

π DRACONIS, $19^h\ 20^m\ 1^s$.

March	20	. .	+65	28	19.4

O. ARG. S. 19623, $19^h\ 22^m\ 22^s$.

September	9	. .	−19	44	47.9

B. A. C. 6702, $19^h\ 25^m\ 59^s$.

August	26	. .	+76	18	31.3

(* 8.8), $19^h\ 26^m\ 3^s$.

August	28	. .	−27	18	46.0
	31	. .			51.9

LACAILLE 8158, $19^h\ 28^m\ 51^s$.

September	23	. .	−41	44	6.6
	24	. .			5.7

(* 8.5), $19^h\ 28^m\ 53^s$.

September	22	. .	−41	47	17.8
	26	. .			20.1

(* 9.0), $19^h\ 29^m\ 38^s$.

September	5	. .	+19	34	7.9

11 CYGNI, $19^h\ 31^m\ 16^s$.

September	7	. .	+36	39	59.9
	12	. .			58.0

σ DRACONIS, $19^h\ 32^m\ 35^s$.

1874.			°	′	″
September	19	. .	+69	26	47.8

O. ARG. S. 19837, $19^h\ 32^m\ 35^s$.

September	9	. .	−25	6	29.9
October	1	. .			31.4

B. A. C. 6752, S. P., $19^h\ 35^m\ 32^s$.

March	20	. .	+71	19	30.4

LACAILLE 8216, $19^h\ 39^m\ 38^s$.

August	28	. .	−42	23	6.7
	31	. .			7.1

B. A. C. 6775, $19^h\ 40^m\ 55^s$.

October	3	. .	−29	12	33.5
	10	. .			36.8

19 CYGNI, $19^h\ 46^m\ 7^s$.

September	5	. .	+38	23	57.3

WEISSE 1150, $19^h\ 46^m\ 11^s$.

September	9	. .	−14	29	51.8
	12	. .			54.9

O. ARG. S. 20051, $19^h\ 47^m\ 26^s$.

September	22	. .	−27	26	9.2
	23	. .			9.4

B. A. C. 6834, $19^h\ 48^m\ 25^s$.

October	10	. .	+60	53	6.5
	15	. .			7.6

(* 7.5), $19^h\ 49^m\ 29^s$.

September	26	. .	−37	59	44.4
October	1	. .			44.5

O. ARG. S. 20086, $19^h\ 49^m\ 31^s$.

September	24	. .	−25	25	16.7

λ URSÆ MINORIS, $19^h\ 49^m\ 36^s$.

August	31	. .	+88	55	41.2

O. ARG. S. 20095, $19^h\ 49^m\ 43^s$.

September	24	. .	−25	23	23.4

LALANDE 38039, $19^h\ 50^m\ 14^s$.

September	7	. .	+36	39	54.3

LALANDE 38037, $19^h\ 50^m\ 17^s$.

September	19	. .	+34	34	10.9
	23	. .			7.2

WEISSE (2) 1729, $19^h\ 53^m\ 10^s$.

October	3	. .	+39	0	4.5

(* 8.5), $19^h\ 55^m\ 6^s$.

September	9	. .	+31	57	58.2
	22	. .			55.9

(* 8.0), 19h 55m 13s.

1874.	°	′	″
September 9	+34	57	8.6
22			7.2

25 CYGNI, 19h 55m 18s.

September 5	+36	41	54.8

(* 7.8), 19h 57m 19s.

September 7	+34	59	0.2
12		58	57.0

(* 6.5), 20h 0m 35s.

September 19	+38	7	0.8
October 1		6	57.9

61 CYGNI, 20h 1m 43s.

September 23	+35	37	34.7
October 3			35.7

LALANDE 38564, 20h 1m 52s.

September 24	+38	44	10.2

(* 9.2), 20h 2m 0s.

September 26	−16	17	41.0

LALANDE 38592, 20h 2m 52s.

September 5	+34	3	30.1

(* 8.5), 20h 5m 35s.

October 15	− 9	13	23.8

LACAILLE 8373, 20h 5m 42s.

September 9	−34	29	38.2

WEISSE (2) 189, 20h 5m 45s.

October 10	+38	43	2.6

O. ARG. S. 20320, 20h 6m 6s.

September 12	−17	15	21.9

O. ARG. S. 20337, 20h 7m 31s.

October 1	−15	42	48.9

O. ARG. S. 20339, 20h 7m 40s.

October 1	−15	43	56.6

WEISSE 145, 20h 8m 8s.

September 19	−13	45	47.2

ρ AQUILÆ, 20h 8m 29s.

October 21	+14	48	53.5

(* 8.3), 20h 8m 47s.

September 24	+38	20	58.4
26			55.5
October 3			56.1

WEISSE (2) 304, 20h 8m 50s.

September 23	+38	23	10.0

WEISSE (2) 329, 20h 9m 19s.

1874.	°	′	″
October 20	+38	46	38.6

3 CAPRICORNI, 20h 9m 26s.

September 7	−12	43	14.4

34 CYGNI, 20h 13m 10s.

October 10	+37	38	30.5
15			32.1

(* 7.5), 20h 14m 14s.

September 5	+37	53	10.5

(* 8.3), 20h 15m 35s.

September 9	−25	23	16.4

(*), 20h 15m 42s.

September 22	−13	37	54.5

WEISSE 359, 20h 16m 5s.

September 22	−13	37	4.3
October 1			9.6

B. A. C. 7023, 20h 18m 12s.

October 20	−12	6	39.8
21			40.0

WEISSE (2) 643, 20h 18m 19s.

September 7	+38	48	27.6
12			25.3

(* 8.5), 20h 18m 20s.

September 19	+38	48	18.3

(*), 20h 18m 40s, S. P.

March 20	+64	17	21.0

O. ARG. S. 20574, 20h 24m 34s.

September 9	−22	58	15.2

B. A. C. 7076, 20h 24m 40s.

October 10	+48	30	2.1
15			3.4

(* 9.0), 20h 26m 24s.

September 23	−21	40	54.0
October 3			54.4

(* 7.5), 20h 29m 39s.

August 31	+37	25	9.1
September 5			10.2

WEISSE 729, 20h 29m 58s.

September 12	−13	10	18.4

WEISSE 729 (1st *), 20h 30m 2s.

1874. -	°	′	″
September 22	−13	10	27.3
26			26.2

B. A. C. 7124, 20h 30m 33s.

August 28	+72	6	16.0
September 19			17.7

(* 9.0), 20h 32m 31s.

October 1	+37	57	49.8

LALANDE 39884, 20h 32m 39s.

September 7	+37	39	34.3
24			34.3

(* 8.5), 20h 32m 37s.

September 9	+37	50	15.1
October 10			14.0

B. A. C. 7130, 20h 32m 39s.

October 20	− 2	51	16.0
21			15.4

(* 9.5), 20h 32m 56s.

October 15	−16	39	43.1

B. A. C. 7172, 20h 35m 36s.

September 12	− 4	22	5.6
23			5.8

WEISSE 942, 20h 37m 44s.

August 31	−10	56	37.5
September 5			39.6

52 CYGNI, 20h 40m 29s.

October 5	+30	15	38.5
10			37.4
13			38.3
20			38.1
21			38.0
23			35.8
26			37.9

4 CEPHEI, 20h 41m 28s.

March 28	+66	11	55.6

B. A. C. 7210, 20h 42m 34s.

September 9	−27	49	55.0
19			52.9
22			56.8

O. ARG. S. 20896, 20h 44m 3s.

September 24	−27	42	45.5
26			48.4

LALANDE 40277, 20h 44m 12s.

September 7	+35	5	54.6

(* 7.5), 20h 47m 16s.

1874.	°	′	″
August 31	+37	56	54.2
September 5			53.9

LALANDE 40400, 20h 47m 30s.

September 23	+39	1	39.0

B. A. C. 7255, 20h 49m 25s.

October 10	+ 4	3	8.7
13			10.9

(* 9.0), 20h 49m 58s.

October 1	+36	40	32.7

(* 7.5), 20h 50m 30s.

September 9	+ 0	1	18.7
19			18.6

76 DRACONIS, S. P., 20h 50m 48s.

March 28	+82	3	50.6

B. A. C. 7269, 20h 51m 32s.

September 7	+ 3	42	42.2
12			39.7

ν CYGNI, 20h 52m 27s.

October 15	+40	40	59.1
20			58.3
21			58.8
26			58.8

B. A. C. 7299, 20h 53m 9s.

August 31	+80	4	41.3

(* 7.5), 20h 55m 56.

September 5	+37	9	38.4
22			38.0
24			39.0
26			36.8

η CAPRICORNI, 20h 57m 17s.

October 13	−20	21	(4.5)
15			7.0
20			7.5
21			7.0
23			7.8

η MICROSCOPEI, 20h 58m 19s.

October 5	−41	53	14.3
10			14.5
28			12.5

(* 8.0), 21h 3m 59s.

September 7	−12	14	23.1
9			23.4

O. ARG. S. 21189 (1st *), 21h 4m 19s.

September 22	−23	37	25.5
24			21.7

(* 8.5), $21^h\ 5^m\ 32^s$.

1874.			°	′	″
October	1	. .	−12	25	48.8
	3	. .			49.2
	10	. .			47.0
	26	. .			49.9

B. A. C. 7363, $21^h\ 5^m\ 38^s$.

March	30	. .	+70	55	35.6

(* 8.8), $21^h\ 8^m\ 33^s$.

October	15	. .	−15	47	(23.5)
	20	. .			17.2

LALANDE 41269, $21^h\ 8^m\ 48^s$.

September	5	. .	+29	22	51.0
	19	. .			54.1

B. A. C. 7378, $21^h\ 9^m\ 36^s$.

October	5	. .	−20	41	42.6
	13	. .			44.4
	23	. .			47.3
	26	. .			46.9

LALANDE 41419, $21^h\ 12^m\ 39^s$.

September	9	. .	+38	41	5.3

WEISSE (2) 322, $21^h\ 14^m\ 21^s$.

September	12	. .	+38	16	30.2
	23	. .			31.1

(* 8.5), $21^h\ 15^m\ 6^s$.

September	22	. .	−23	14	10.0

i CAPRICORNI, $21^h\ 15^m\ 14^s$.

October	20	. .	−17	22	11.8
	21	. .			11.8

LACAILLE 8790, $21^h\ 15^m\ 16^s$.

September	24	. .	−29	58	11.3
October	5	. .			12.6

34 VULPECULÆ, $21^h\ 15^m\ 24^s$.

September	5	. .	+23	19	33.8

(* 8.3), $21^h\ 15^m\ 59^s$.

October	3	. .	+48	49	6.8

B. A. C. 7422, $21^h\ 16^m\ 58^s$.

November	3	. .	−26	5	57.9
	7	. .			56.3

19 AQUARII, $21^h\ 18^m\ 32^s$.

September	7	. .	−10	16	57.8
October	15	. .		17	1.7
	26	. .		17	2.5

(* 7.2), $21^h\ 19^m\ 9^s$.

1874.			°	′	″
September	9	. .	+38	5	53.9

(* 8.2), $21^h\ 21^m\ 8^s$.

October	13	. .	+35	17	45.5

LALANDE 41789, $21^h\ 22^m\ 40^s$.

September	12	. .	+34	51	39.7
	22	. .			41.0

(* 8.5), $21^h\ 22^m\ 56$.

September	24	. .	−23	45	33.0
October	15	. .			(23.5)

B. A. C. 7466, $21^h\ 23^m\ 13^s$.

October	3	. .	−25	44	35.3

2 PEGASI, $21^h\ 24^m\ 18^s$.

October	28	. .	+23	5	16.2
	29	. .			16.4
November	6	. .			13.2

(* 8.0), $21^h\ 24^m\ 55^s$.

September	7	. .	−25	46	44.2

7 PISCIS AUSTRALIS, $21^h\ 29^m\ 17^s$.

November	7	. .	−33	36	36.1
	12	. .			37.0

(* 8.5), $21^h\ 29^m\ 17^s$.

September	9	. .	+38	4	41.4
	26	. .			33.8

B. A. C. 7504, S. P., $21^h\ 29^m\ 17^s$.

April	21	. .	+86	30	42.8

(*), $21^h\ 29^m\ 54^s$.

September	2	. .	+38	52	31.5

LACAILLE 8863, $21^h\ 30^m\ 58^s$.

October	26	. .	−26	0	38.2
November	3	. .			37.5

B. A. C. 7517, $21^h\ 31^m\ 31^s$.

October	10	. .	−15	28	35.8
	13	. .			34.4
	15	. .			36.8
	23	. .			37.3
	28	. .			35.8

LALANDE 42269, $21^h\ 34^m\ 48^s$.

September	7	. .	+38	56	44.3
	9	. .			43.4

i PISCIS AUSTRALIS, $21^h\ 37^m\ 30^s$.

October	10	. .	−33	35	58.1
	20	. .			57.7
	21	. .			59.1
	23	. .			59.6

11 CEPHEI, $21^h\ 40^m\ 4^s$.

1874.			°	′	″
March	28	. .	+70	43	50.9
	30	. .			53.2
April	2	. .			54.3
	21	. .			54.6

(* 9.0), $21^h\ 41^m\ 24^s$.

September	26	. .	−18	57	4.3
October	1	. .			5.5

(* 9.2), $21^h\ 42^m\ 27^s$.

October	13	. .	+ 2	4	2.6
	15	. .			4.6

(* 9.5), $21^h\ 43^m\ 30^s$.

November	7	. .	+ 2	13	30.0

(* 7.0), $21^h\ 44^m\ 4^s$.

September	7	. .	+37	45	44.7

B. A. C. 7614, $21^h\ 45^m\ 53^s$.

September	12	. .	+38	56	51.0
October	29	. .			49.9

WEISSE 1063, $21^h\ 46^m\ 5^s$.

October	26	. .	− 5	57	18.0
November	12	. .			18.9

γ GRUIS, $21^h\ 46^m\ 20^s$.

November	6	. .	−37	57	25.2

(*), $21^h\ 46^m\ 41^s$.

October	5	. .	+37	50	21.3
	23	. .			20.2

(* 6.5), $21^h\ 46^m\ 50^s$.

September	24	. .	−36	39	10.9
November	3	. .			15.0

(* 8.0), $21^h\ 46^m\ 59^s$.

October	20	. .	+38	19	49.1
	28	. .			50.5

WEISSE (2) 1140, $21^h\ 47^m\ 34^s$.

October	10	. .	+38	14	40.0
	21	. .			38.0

79 DRACONIS, S. P., $21^h\ 51^m\ 16^s$.

March	25	. .	+73	6	22.2
	28	. .			22.1
	30	. .			23.8
April	2	. .			23.1

B. A. C. 7647, $21^h\ 51^m\ 46^s$.

October	15	. .	−38	59	46.7
November	7	. .			44.7

LALANDE 42878, $21^h\ 52^m\ 51^s$.

September	7	. .	+38	19	39.0

LACAILLE 9008, $21^h\ 55^m\ 32^s$.

1874.			°	′	″
September	12	. .	−27	58	21.8
	22	. .			22.0
October	20	. .			21.3

29 AQUARII (1st *), $21^h\ 55^m\ 35^s$.

September	26	. .	−17	34	17.7
October	1	. .			17.2

29 AQUARII (2d *), $21^h\ 55^m\ 35^s$.

October	1	. .	−17	34	15.3

LALANDE 9006, $21^h\ 56^m\ 49^s$.

November	12	. .	−39	29	0.7
	16	. .			0.5

λ GRUIS, $21^h\ 58^m\ 34^s$.

October	21	. .	−40	9	1.5
	23	. .			2.4
	26	. .			2.6

23 PEGASI, $21^h\ 59^m\ 54^s$.

September	7	. .	+28	21	11.9
October	29	. .			9.0

ξ CEPHEI (2d *), $22^h\ 0^m\ 8^s$.

October	28	. .	+64	0	51.8

(* 8.5), $22^h\ 0^m\ 14^s$.

November	21	. .	+53	8	17.7
	25	. .			20.3
	26	. .			21.3

O. ARG. S. 21912, $22^h\ 1^m\ 22^s$.

September	23	. .	−18	26	48.6
November	6	. .			50.0

WEISSE 1398, $22^h\ 1^m\ 56^s$.

October	13	. .	−12	13	40.6
	15	. .			42.6

(* 8.5), $22^h\ 3^m\ 45^s$.

September	22	. .	+36	47	45.3
November	14	. .			46.4

ϵ^2 AQUARII, $22^h\ 3^m\ 51^s$.

October	10	. .	− 12	11	1.1
	15	. .			2.8
November	3	. .			1.6

O. ARG. S. 22049, $22^h\ 10^m\ 42^s$.

September	22	. .	−21	5	53.3
October	1	. .			51.2
November	26	. .			(58.3)

LACAILLE 9091, $22^h\ 10^m\ 59^s$.

November	14	. .	−37	13	23.2
	21	. .			26.3
	25	. .			26.7

O. ARG. S. 22051, $22^h\ 11^m\ 6^s$.

1874.			°	′	″
September	23	. .	−21	7	21.6
	24	. .			19.8
November	26	. .			23.5

30 PEGASI, $22^h\ 14^m\ 9^s$.

October	15	. .	+ 5	9	25.4
	21	. .			26.5
November	3	. .			24.4

WEISSE 281, $22^h\ 15^m\ 14^s$.

September	26	. .	− 6	48	54.8
October	13	. .			52.2

WEISSE (2) 349, $22^h\ 16^m\ 38^s$.

October	26	. .	+36	36	24.7
November	7	. .			23.9
	12	. .			19.0
	16	. .			22.4

LALANDE 43717, $22^h\ 17^m\ 17^s$.

October	5	. .	+36	1	16.1
	17	. .			16.7

(* 8.3), $22^h\ 17^m\ 23^s$.

October	23	. .	+36	40	25.0

B. A. C. 7810, $22^h\ 18^m\ 0^s$.

October	10	. .	+66	4	12.0

LALANDE 43751, $22^h\ 18^m\ 21^s$.

September	23	. .	+37	55	56.4
	24	. .			57.4

(* 8.4), $22^h\ 18^m\ 24^s$.

September	22	. .	+38	35	0.1
October	13	. .		34	59.6

(* 7.5), $22^h\ 20^m\ 56^s$.

November	14	. .	−39	43	45.9
	21	. .			51.4
	25	. .			50.7

B. A. C. 7826, $22^h\ 21^m\ 23^s$.

November	3	. .	−39	46	8.9
	14	. .			3.8
	21	. .			9.6
	25	. .			7.2

O. ARG. S. 22177, $22^h\ 22^m\ 27^s$.

October	1	. .	−27	48	4.5

(*), $22^h\ 24^m\ 36^s$.

October	15	. .	+ 6	37	7.2

39 PEGASI, $22^h\ 26^m\ 30^s$.

September	22	. .	+19	34	52.2
October	17	. .			52.0
	23	. .			51.3

B. A. C. 7861, $22^h\ 27^m\ 30^s$.

1874.			°	′	″
September	26	. .	−10	15	27.8
October	21	. .			27.1

(* 9.0), $22^h\ 27^m\ 31^s$.

November	16	. .	−28	11	46.4

60 AQUARII, $22^h\ 27^m\ 37^s$.

November	12	. .	− 2	13	18.9
	26	. .			18.8

(* 7.5), $22^h\ 27^m\ 46^s$.

September	23	. .	+37	28	44.9
October	28	. .			43.8

O. ARG. S. 22224, $22^h\ 28^m\ 7^s$.

October	26	. .	−28	7	15.4

226 CEPHEI, S. P., $22^h\ 29^m\ 56^s$.

March	25	. .	+75	34	38.4
	28	. .			36.3
	30	. .			36.8

LALANDE 44195, $22^h\ 30^m\ 27^s$.

September	24	. .	+34	55	39.8
October	1	. .			38.0

(* 7.0), $22^h\ 30^m\ 28^s$.

October	10	. .	+36	6	38.5
November	3	. .			37.8

B. A. C. 7891 (1st *), $22^h\ 32^m\ 46^s$.

November	14	. .	−28	58	45.4
	21	. .			47.9
	25	. .			46.0

B. A. C. 7895, $22^h\ 33^m\ 25^s$.

November	26	. .	−31	18	26.4
	30	. .			27.6

LALANDE 44346, $22^h\ 33^m\ 56^s$.

October	23	. .	+38	5	33.6
	28	. .			33.6

(* 8.3), $22^h\ 33^m\ 56^s$.

October	17	. .	+36	41	30.7
November	7	. .			29.7

WEISSE (2) 764, $22^h\ 33^m\ 56^s$.

November	6	. .	+36	41	53.1

O. ARG. N. 24533, $22^h\ 36^m\ 53^s$.

October	10	. .	+53	35	20.0
	15	. .			19.6

O. ARG. S. 22383, $22^h\ 38^m\ 45^s$.

October	1	. .	−21	32	1.0
November	12	. .			0.2

LACAILLE 9244, $22^h\ 39^m\ 54^s$.

1874.			°	′	″
October	23	. .	−33	50	45.1
	26	. .			45.2

B. A. C. 7944, $22^h\ 40^m\ 42^s$.

November	25	. .	−38	52	58.3
	26	. .		53	0.1

LACAILLE 9253, $22^h\ 40^m\ 57^s$.

November	7	. .	−38	25	15.8
	14	. .			11.6
	16	. .			14.5
	21	. .			14.2

LACAILLE 9271, $22^h\ 43^m\ 3^s$.

September	24	. .	−33	28	13.3
	26	. .			15.9

ι CEPHEI, S. P., $22^h\ 45^m\ 13^s$.

March	30	. .	+65	32	15.0

δ PISCIS AUSTRALIS, $22^h\ 49^m\ 1^s$.

November	12	. .	−33	12	44.3
	14	. .			42.6

LALANDE 44862 (1st *), $22^h\ 49^m\ 50^s$.

October	10	. .	+35	40	(23.9)
	17	. .			13.4
November	3	. .			11.5

LACAILLE 9315 (2d *), $22^h\ 50^m\ 58^s$.

November	6	. .	−26	46	19.1

(* 8.5), $22^h\ 51^m\ 2^s$.

October	26	. .	−26	50	21.4
	28	. .			23.4
November	7	. .			21.9

B. A. C. 7998, $22^h\ 51^m\ 38^s$.

November	25	. .	−36	11	33.9
	26	. .			34.7

B. A. C. 8002, $22^h\ 52^m\ 47^s$.

November	16	. .	−30	8	14.8
	21	. .			14.0

LACAILLE 9339, $22^h\ 53^m\ 18^s$.

October	28	. .	−26	49	24.2
November	7	. .			24.4

LALANDE 45037, $22^h\ 55^m\ 5^s$.

September	24	. .	+38	1	56.9

LALANDE 45078, $22^h\ 56^m\ 14^s$.

October	1	. .	+36	48	1.9
	10	. .			2.0
December	2	. .			2.9

WEISSE 1223, $22^h\ 59^m\ 0^s$.

November	12	. .	− 4	55	41.4
	16	. .			43.7

B. A. C. 8045, $22^h\ 59^m\ 55^s$.

1874.			°	′	″
December	4	. .	−39	34	26.7

56 PEGASI, $23^h\ 1^m\ 2^s$.

October	13	. .	+24	47	18.5
	23	. .			17.4
November	3	. .			17.8
	6	. .			18.1

LACAILLE 9385, $23^h\ 3^m\ 30^s$.

November	21	. .	−40	42	56.1
	26	. .			58.1

WEISSE (2) 34 (1st *), $23^h\ 4^m\ 3^s$.

October	10	. .	+36	10	45.1
	26	. .			45.1

WEISSE (2) 35, $23^h\ 4^m\ 8^s$.

October	26	. .	+36	9	53.7

(* 10.0), $23^h\ 4^m\ 21^s$.

November	7	. .	+38	14	13.4

O. ARG. S. 22632, $23^h\ 6^m\ 56^s$.

October	1	. .	−18	3	15.2

B. A. C. 8094, $23^h\ 9^m\ 9^s$.

October	15	. .	− 4	10	58.5
	17	. .			58.3
	20	. .			58.2

LALANDE 45588, $23^h\ 10^m\ 57^s$.

October	10	. .	+37	16	29.2
	13	. .			29.7
	28	. .			28.7

φ GRUIS, $23^h\ 11^m\ 16^s$.

November	25	. .	−41	30	28.0
	26	. .			30.1
December	4	. .			31.5

γ SCULPTORIS, $23^h\ 12^m\ 5^s$.

November	3	. .	−33	13	6.0
	6	. .			5.6
	21	. .			5.0

LACAILLE 9437, $23^h\ 12^m\ 12^s$.

November	12	. .	−31	14	23.6
	14	. .			23.2
	16	. .			24.5

LALANDE 45704, $23^h\ 14^m\ 21^s$.

October	1	. .	−19	13	58.4
November	7	. .			56.0

(* 8.5), $23^h\ 16^m\ 12^s$.

November	26	. .	+66	22	4.8

RADCLIFFE 6064, 23h 18m 31s.

1874.			°	′	″
October	10	. .	+54	29	37.0
	26	. .			35.7

RUMKER 11173, 23h 20m 17s.

November	25	. .	+54	24	56.5
	30	. .			54.1

(* 7.5), 23h 20m 23s.

November	12	. .	+66	13	43.0

RADCLIFFE 6081, 23h 21m 18s.

October	17	. .	+54	10	20.5

(* 8.5), 23h 21m 22s.

November	14	. .	+54	6	33.7

WEISSE (2) 457, 23h 22m 35s.

October	13	. .	+38	55	34.3
	15	. .			29.1

LALANDE 9500, 23h 24m 15s.

October	23	. .	−35	48	2.0
December	4	. .			5.5

(* 10.0), 23h 25m 3s.

November	7	. .	+15	12	10.2

(* 6.0), 23h 26m 16s.

November	6	. .	+34	15	25.5
	16	. .			26.3

LALANDE 46188, 23h 28m 30s.

October	10	. .	+37	6	0.0
	17	. .			1.3

16 PISCIUM, 23h 29m 58s.

October	13	. .	+ 1	24	13.8
	15	. .			13.5
	26	. .			10.8

ι ANDROMEDÆ, 23h 32m 1s.

1874.			°	′	″
November	3	. .	+42	34	14.1
	12	. .			14.1
	14	. .			15.3

18 ANDROMEDÆ, 23h 33m 5s.

November	25	. .	+49	46	26.6
December	2	. .			26.0

LACAILLE 9548, 23h 33m 13s.

November	21	. .	−23	13	49.6
	26	. .			49.8

LACAILLE 9547, 23h 33m 17s.

December	5	. .	−33	25	51.6
	8	. .			49.6

γ CEPHEI, S. P., 23h 34m 12s.

May	22	. .	+76	55	45.2

LACAILLE 9554, 23h 34m 24s.

December	18	. .	−38	33	55.4

LACAILLE 9583, 23h 39m 27s.

November	26	. .	−38	40	33.3
December	4	. .			35.0

B. A. C. 8273, S. P., 23h 41m 56s.

March	30	. .	+67	6	23.9
May	11	. .			24.1
	19	. .			25.8
	21	. .			25.6
	22	. .			26.5
	26	. .			25.9

(* 8.5), 23h 42m 16s.

October	17	. .	+63	6	9.4
	26	. .			8.0

LACAILLE 9609, 23h 43m 23s.

December	8	. .	−43	0	7.4
	15	. .			5.1
	18	. .			7.0

LACAILLE 9625, 23h 45m 27s.

1874.			°	′	″
November	25	. .	−33	49	21.8
	26	. .			21.6

B. A. C. 8296, 23h 46m 4s.

October	13	. .	+20	58	15.0
	15	. .			13.2
December	5	. .			13.1

(* 7.7), 23h 46m 22s.

November	6	. .	+34	16	13.0
	7	. .			14.5

(* 8.0), 23h 46m 28s.

November	12	. .	+28	54	29.6
	14	. .			31.5

25 PISCIUM, 23h 46m 42s.

November	3	. .	+ 1	23	24.0
	16	. .			26.6

LALANDE 46811, 23h 46m 53s.

November	21	. .	+34	21	8.7
December	2	. .			9.2

WEISSE (2) 994, 23h 48m 27s.

October	10	. .	+36	53	34.8
December	4	. .			35.8

B. A. C. 8314, S. P., 23h 48m 45s.

March	30	. .	+73	42	33.6
May	11	. .			32.8

LACAILLE 9663, 23h 51m 11s.

December	18	. .	−33	53	29.8
	19	. .			27.7

(* 8.8), 23h 52m 20s.

October	26	. .	−30	12	(16.1)
December	5	. .			10.2

B. A. C. 8332, 23h 53m 5s.

1874.			°	′	″
December	2	. .	−30	11	14.7
	5	. .			12.6

(* 9.0), 23h 53m 8s.

December	8	. .	+ 6	11	14.0

(* 9.0), 23h 54m 35s.

November	14	. .	+ 6	11	25.5

LACAILLE 9699, 23h 55m 30s.

November	7	. .	−38	36	10.0
	12	. .			7.2

ζ SCULPTORIS, 23h 55m 55s.

November	3	. .	−30	25	21.8
	16	. .			21.4

ζ^2 PISCIUM, 23h 56m 6s.

October	13	. .	+ 7	47	9.8
	15	. .			8.7
	17	. .			7.8

B. A. C. 8355, S. P., 23h 56m 11s.

May	11	. .	+65	23	49.9
	19	. .			50.2

LACAILLE 9705, 23h 57m 52s.

November	25	. .	−30	50	11.4
	26	. .			11.2

LACAILLE 9706, 23h 57m 56s.

October	23	. .	−29	58	14.4
November	6	. .			14.0

LACAILLE 9713, 23h 58m 37s.

December	4	. .	−36	43	9.6
	15	. .			7.8

86 PEGASI, 23h 59m 17s.

December	18	. .	+12	41	41.0
	19	. .			43.1

MEAN PLACES

OF

MISCELLANEOUS STARS,

GIVEN BY

INDIVIDUAL OBSERVATIONS

WITH THE

TRANSIT CIRCLE.

1874.

44——74 A

MEAN PLACES OF MISCELLANEOUS STARS FOR 1874.0,

GIVEN BY

INDIVIDUAL OBSERVATIONS

WITH

THE TRANSIT CIRCLE.

XXIII, 20.

1874.		h. m. s.	° ′ ″
Sept. 23	S.	0 0 43.52	128 37 49.4
24	Sk.	43.48	48.8
25	E.	. .	49.2
26	F.	43.54	50.5
Mean . . .		0 0 43.513	128 37 49.48
Div., Flex., etc.		. .	+ 1.35

B. A. C. 7.

1874.		h. m. s.	° ′ ″
Oct. 20	F.	0 2 28.08	31 32 43.9
Nov. 3	Sk.	27.73	40.6
4	E.	27.90	41.2
Mean . . .		0 2 27.903	31 32 41.90
Div., Flex., etc.		. .	+ 0 71

O, 1.

1874.		h. m. s.	° ′ ″
Oct. 20	F.	0 6 52.36	128 31 28.6
22	Sk.	52.47	25.0
Mean . . .		0 6 52.415	128 31 26.80
Div., Flex., etc.		. .	+ 1.35

O, 2.

1874.		h. m. s.	° ′ ″
Oct. 23	E.	0 7 21.13	116 59 9.0
26	Sk.	20.89	10.2
Mean . . .		0 7 21.010	116 59 9.60
Div., Flex., etc.		. .	+ 1.55

O, 9.

1874.		h. m. s.	° ′ ″
Oct. 12	F.	0 27 46.85	121 0 56.7
20	F.	46.81	59.8
Mean . . .		0 27 46.830	121 0 58.25
Div., Flex., etc.		. .	+ 1.58

O, 10.

1874.		h. m. s.	° ′ ″
Oct. 12	F.	0 29 50.70	113 32 3.9
20	F.	50.65	7.3
Mean . . .		0 29 50.675	113 32 5.60
Div., Flex., etc.		. .	+ 1.62

O, 11.

1874.		h. m. s.	° ′ ″
Oct. 12	F.	0 30 52.41	115 27 37.8
Div., Flex., etc.		. .	+ 1.61

O, 12.

1874.		h. m. s.	° ′ ″
Oct. 22	Sk.	0 31 9.09	126 6 46.8
26	Sk.	9.00	52.1
Mean . . .		0 31 9.045	126 6 49.45
Div., Flex., etc.		. .	+ 1.45

O, 13.

1874.		h. m. s.	° ′ ″
Oct. 22	Sk.	0 31 53.19	118 18 52.4
Nov. 3	Sk.	53.37	49.8
4	E.	53.37	52.5
Mean . . .		0 31 53.310	118 18 51.57
Div., Flex., etc.		. .	+ 1.57

B. A. C. 214.

1874.		h. m. s.	° ′ ″
Sept. 25	E.	0 40 34.36	71 6 35.5
Oct. 12	F.	34.31	36.1
Mean . . .		0 40 34.335	71 6 35.80
Div., Flex., etc.		. .	+ 1.24

B. A. C. 262.

1874.		h. m. s.	° ′ ″
Sept. 25	E.	0 51 53.99	4 25 9.4
Nov. 7	Sk.	54.55	11.3
27	F.	51.75	10.8
Mean . . .		0 51 53.430	4 25 10.50
Div., Flex., etc.		. .	+ 0.83

I, 5.

1874.		h. m. s.	° ′ ″
Jan. 12	E.	1 49 26.18	115 59 9.0
Sept. 26	F.	26.35	10.7
Mean . . .		1 49 26.265	115 59 9.85
Div., Flex., etc.		. .	+ 1.58

I, 6.

1874.		h. m. s.	° ′ ″
Aug. 31	Sk.	1 49 47.93	118 19 44.2
Div., Flex., etc.		. .	+ 1.57

I, 7.

1874.		h. m. s.	° ′ ″
Oct. 22	Sk.	1 50 51.39	119 29 18.5
Nov. 21	F.	51.30	18.0
Mean . . .		1 50 51.345	119 29 18.25
Div., Flex., etc.		. .	+ 1.60

I, 8.

1874.		h. m. s.	° ′ ″
Nov. 13	F.	1 50 58.28	122 45 20.3
16	E.	58.28	20.0
Mean . . .		1 50 58.280	122 45 20.15
Div., Flex., etc.		. .	+ 1.53

I, 10.

1874.		h. m. s.	° ′ ″
Oct. 26	Sk.	1 52 53.03	123 40 48.3
Nov. 3	Sk.	53.05	47.0
Mean . . .		1 52 53.040	123 40 47.65
Div., Flex., etc.		. .	+ 1.52

I, 9[1].

1874.		h. m. s.	° ′ ″
Jan. 12	E.	1 53 6.98	113 32 0.5
Aug. 31	Sk.	7.00	3 58.4
Oct. 19	E.	7.18	59.6
Mean . . .		1 53 7.053	113 31 59.50
Div., Flex., etc.		. .	+ 1.62

I, 9[2].

1874.		h. m. s.	° ′ ″
Jan. 12	E.	1 53 7.66	113 32 4.1
Aug. 31	Sk.	7.55	1.7
Oct. 19	E.	7.69	3.0
Mean . . .		1 53 7.633	113 32 2.93
Div., Flex., etc.		. .	+ 1.62

ANONYMOUS.

1874.		h. m. s.	° ′ ″
Nov. 13	F.	2 50 35.40	68 57 23.2
Div., Flex., etc.		. . .	+ 1.28

B. A. C. 960.

1874.		h. m. s.	° ′ ″
Jan. 12	E.	3 2 51.38	5 32 29.7
Nov. 25	F.	50.79	21.6
Dec. 4	F.	51.39	28.0
Mean . . .		3 2 51.187	5 32 26.43
Div., Flex., etc.		. .	+ 0.79

III, 5.

1874.		h. m. s.	° ′ ″
Jan. 12	E.	3 43 2.83	111 17 23.4
Div., Flex., etc.		. .	+ 1.50

B. A. C. 1247.

1874.	h. m. s.	° ′ ″
Jan. 15 Sk.	3 59 11.66	6 30 23.0
17 Sk.	12.82	22.6
Aug. 31 Sk.	13.78	23.6
Mean . . .	3 59 12.753	6 30 23.07
Div., Flex., etc.	. .	+ 0.72

IV, 8.

1874.	h. m. s.	° ′ ″
Jan. 16 E.	4 53 35.70	119 4 51.0
Div., Flex., etc.	. .	+ 1.65

ANONYMOUS.

1874.	h. m. s.	° ′ ″
Jan. 29 F.	5 57 15.78	71 4 0.8
Feb. 12 F.	15.64	2.5
16 Sk.	15.72	1.9
Mean . . .	5 57 15.713	71 4 1.50
Div., Flex., etc.	. .	+ 1.24

ANONYMOUS.

1874.	h. m. s.	° ′ ″
Feb. 4 F.	5 57 46.44	72 4 5.3
Div., Flex., etc.	. .	+ 1.21

ANONYMOUS.

1874.	h. m. s.	° ′ ″
Jan. 29 F.	6 1 48.06	71 14 42.5
Feb. 12 F.	48.00	45.8
17 E.	48.16	42.0
Mean . . .	6 1 48.073	71 14 43.43
Div., Flex., etc.	. .	+ 1.23

ANONYMOUS.

1874.	h. m. s.	° ′ ″
Jan. 29 F.	6 2 13.10	71 17 52.6
Feb. 12 F.	12.92	50.9
17 E.	13.14	50.4
Mean . . .	6 2 13.053	71 17 51.30
Div., Flex., etc.	. .	+ 1.23

ANONYMOUS.

1874.	h. m. s.	° ′ ″
Feb. 4 F.	6 3 18.51	71 16 33.2
Div., Flex., etc.	. .	+ 1.23

ANONYMOUS.

1874.	h. m. s.	° ′ ″
Jan. 29 F.	6 17 29.01	71 18 54.1
Feb. 4 F.	29.03	54.3
10 E.	29.16	51.8
Mean . . .	6 17 29.067	71 18 53.40
Div., Flex., etc.	. .	+ 1.23

ANONYMOUS.

1874.	h. m. s.	° ′ ″
Jan. 29 F.	6 18 10.00	71 17 34.2
Feb. 4 F.	10.13	34.0
10 E.	10.09	32.6
Mean . . .	6 18 10.073	71 17 33.60
Div., Flex., etc.	. .	+ 1.23

DURCH. 68°, 446, S. P.

1874.	h. m. s.	° ′ ″
July 6 Sk.	6 24 59.72	338 49 58.3
7 E.	59.42	40.5*
Mean . . .	6 24 59.570	338 49 58.3
Div., Flex., etc.	. .	+ 0.84

*From a comparison with more recent observations, this is probably wrong, and is rejected in the means.

DURCH. 68°, 447, S. P.

1874.	h. m. s.	° ′ ″
July 6 Sk.	6 27 55.70	338 45 22.6
7 E.	55.00	23.3
Mean . . .	6 27 55.350	338 45 22.95
Div, Flex., etc.	. .	+ 0.84

VI, 3.

1874.	h. m. s.	° ′ ″
Jan. 24 E.	6 30 3.80	119 59 34.2
28 E.	3.65	33.6
Mean . . .	6 30 3.725	119 59 33.90
Div., Flex., etc.	. .	+ 1.61

VI, 4.

1874.	h. m. s.	° ′ ″
Jan. 16 E.	6 31 13.71	118 43 57.8
24 E.	14.01	56.8
28 E.	13.98	57.3
Mean . . .	6 31 13.900	118 43 57.30
Div., Flex., etc.	. .	+ 1.59

VI, 7.

1874.	h. m. s.	° ′ ″
Jan. 16 E.	6 38 11.38	119 6 47.9
24 E.	11.58	45.9
Mean . . .	6 38 11.480	119 6 46.90
Div., Flex., etc.	. .	+ 1.60

VI, 8.

1874.	h. m. s.	° ′ ″
Jan. 16 E.	6 39 50.14	117 13 21.9
24 E.	50.32	20.9
Mean . . .	6 39 50.230	117 13 21.40
Div., Flex., etc.	. .	+ 1.55

VI, 9.

1874.	h. m. s.	° ′ ″
Jan. 16 E.	6 52 40.55	117 22 11.7
Div., Flex., etc.	. .	+ 1.55

WEISSE (2) 1656.

1874.	h. m. s.	° ′ ″
Jan. 16 E.	6 55 59.17	62 58 52.7
31 Sk.	58.91	52.3
Mean . . .	6 55 59.040	62 58 52.50
Div., Flex., etc.	. .	+ 1.17

VII, 1.

1874.	h. m. s.	° ′ ″
Feb. 16 Sk.	7 3 16.99	116 11 39.3
Div., Flex., etc.	. .	+ 1.57

B. A. C. 2326.

1874.	h. m. s.	° ′ ″
Jan. 16 E.	7 4 26.33	7 21 9.8
31 Sk.	25.94	10.2
Feb. 17 E.	25.67	9.7
Mean . . .	7 4 25.980	7 21 9.90
Div., Flex., etc.	. .	+ 0.71

VII, 2.

1874.	h. m. s.	° ′ ″
Feb. 16 Sk.	7 10 28.55	120 28 4.0
17 E.	28.69	27 58.8
18 F.	28.48	28 1.9
Mean . . .	7 10 28.573	120 28 1.57
Div., Flex., etc.	. .	+ 1.60

VII, 4.

1874.	h. m. s.	° ′ ″
Jan. 28 E.	7 13 53.26	120 59 45.9
Feb. 17 E.	53.49	46.0
Mean . . .	7 13 53.375	120 59 45.95
Div., Flex., etc.	. .	+ 1.58

VII, 6.

1874.	h. m. s.	° ′ ″
Feb. 16 Sk.	7 33 17.56	127 43 44.9
Div., Flex., etc.	. .	+ 1.37

VII, 7.

1874.	h. m. s.	° ′ ″
Feb. 18 F.	7 35 24.79	117 55 43.8
March 1 E.	24.95	44.1
9 E.	24.99	44.3
Mean . . .	7 35 24.910	117 55 44.07
Div., Flex., etc.	. .	+ 1.56

ANONYMOUS.

1874.	h. m. s.	° ′ ″
Jan. 28 E.	7 36 10.32	56 28 1.7
Feb. 4 F.	10.32	2.8
March 14 E.	10.21	0.7
Mean . . .	7 36 10.283	56 28 1.73
Div., Flex., etc.	. .	+ 1.10

VII, 8.

1874.	h. m. s.	° ′ ″
Feb. 17 E.	7 38 45.21	118 39 14.5
March 10 F.	44.97	15.0
Mean . . .	7 38 45.090	118 39 14.75
Div., Flex., etc.	. .	+ 1.59

B. A. C. 2585.

1874.	h. m. s.	° ′ ″
Jan. 31 Sk.	7 46 28.02	5 35 7.7
Feb. 16 Sk.	28.39	9.3
18 F.	26.39	7.3
Mean . . .	7 46 27.600	5 35 8.10
Div., Flex., etc.	. .	+ 0.79

ANONYMOUS.

1874.			h. m. s.	° ′ ″
Feb.	16	Sk.	7 55 44.53	60 53 45.3
	18	F.	44.56	44.5
	27	S.	44.69	42.7
Mean . . .			7 55 44.593	60 53 44.17
Div., Flex., etc.			. .	+ 1.15

ANONYMOUS.

1874.			h. m. s.	° ′ ″
Feb.	10	E.	8 0 31.25	61 2 22.5
	17	E.	31.21	. .
	18	F.	31.20	22.3
Mar.	1	E.	31.06	22.2
Mean . . .			8 0 31.180	61 2 22.33
Div., Flex., etc.			. .	+ 1.15

VIII, 2.

1874.			h. m. s.	° ′ ″
Feb	16	Sk.	8 13 0.00	125 40 37.7
Div., Flex., etc.			. .	+ 1.48

ANONYMOUS.

1874.			h. m. s.	° ′ ″
Feb.	10	E.	8 14 42.72	125 42 0.4
Div., Flex , etc.			. .	+ 1.47

ANONYMOUS.

1874.			h. m. s.	° ′ ″
Oct.	28	F.	8 20 53.38	73 16 37.2
Dec.	11	F.	53.53	35.2
Mean . . .			8 20 53.455	73 16 36.20
Div., Flex., etc.			. .	+ 1.21

ANONYMOUS.

1874.			h. m. s.	° ′ ″
April	13	Sk.	8 21 41.59	73 15 30.5
Div., Flex , etc.			. .	+ 1.21

VIII, 5.

1874.			h. m. s.	° ′ ″
Feb.	4	F.	8 25 20.11	117 24 43.0
	16	Sk.	20.28	40.8
Mean . . .			8 25 20.195	117 24 41.90
Div., Flex., etc.			. .	+ 1.55

VIII, 6.

1874.			h. m. s.	° ′ ″
Feb.	27	S.	8 25 42.34	120 42 40.3
Div., Flex., etc.			. .	+ 1.59

VIII, 8.

1874.			h. m. s.	° ′ ″
Feb.	18	F.	8 30 42.85	122 42 25.6
Div., Flex., etc.			. .	. + 1.54

ANONYMOUS.

1874.			h. m. s.	° ′ ″
Feb.	4	F.	8 33 1.35	103 21 . .
	10	E.	1.29	11.1
Mar.	2	F.	1.27	9.4
	9	E.	1.44	12.0
	12	E.	1.51	11.2
Mean . . .			8 33 1.372	103 21 10.92
Div., Flex., etc.			. .	+ 1.29

ANONYMOUS.

1874.			h. m. s.	° ′ ″
Feb.	10	E.	8 33 24.84	103 21 16.4
Mar.	9	E.	25.12	17.8
	12	E.	25.11	16.5
Mean . . .			8 33 25.023	103 21 16.90
Div., Flex., etc.			. .	+ 1.29

VIII, 11.

1874.			h. m. s.	° ′ ″
Feb.	16	Sk.	8 39 20.51	121 33 57.1
Div., Flex., etc.			. .	+ 1.56

WEISSE (2) 67.

1874.			h. m. s.	° ′ ″
Feb.	11	S.	9 5 26.18	45 39 20.0
	27	S.	26.02	19.1
Mar.	9	E.	26.26	18.8
Mean . . .			9 5 26.153	45 39 19.30
Div., Flex., etc.			. .	+ 0.28

WEISSE (2) 137.

1874.			h. m. s.	° ′ ″
Mar.	9	E.	9 8 49.44	46 30 58.6
	10	F.	49.24	58.2
	11	S.	49.15	57.7
Dec.	24	S.	49.46	59.4
Mean . . .			9 8 49.322	46 30 58.48
Div., Flex., etc.			. .	+ 0.27

WEISSE (2) 334.

1874.			h. m. s.	° ′ ″
Mar.	9	E.	9 17 39.24	49 46 3.6
	10	F.	39.08	3.6
	11	S.	38.93	3.9
Mean . . .			9 17 39.083	49 46 3.70
Div., Flex., etc.			. .	+ 0.36

WEISSE (2) 363.

1874.			h. m. s.	′ ″
Mar.	2	F.	9 18 48.39	48 25 52.6
	9	E.	48.41	52.3
	19	S.	48.24	51.1
	21	E.	48.46	51.5
Mean . . .			9 18 48.382	48 25 51.88
Div., Flex , etc.			. .	+ 0.29

IX, 2¹.

1874.			h. m. s.	° ′ ″
Feb.	16	Sk.	9 24 5.47	116 2 33.3
Div., Flex., etc.			. .	+ 1.58

IX, 2².

1874.			h. m. s.	° ′ ″
Feb.	16	Sk.	9 24 19.03	116 2 18.8
Div , Flex., etc.			. .	+ 1.58

WEISSE (2) 503.

1874.			h. m. s.	° ′ ″
Feb.	11	S.	9 25 30.56	52 47 20.5
Mar.	4	Sk.	30.22	21.4
Mean . . .			9 25 30.390	52 47 20.95
Div., Flex., etc.			. .	+ 0.75

BONN VI, + 39°, 2260.

1874.			h. m. s.	° ′ ″
Feb.	17	E.	9 25 55.08	50 38 59.4
	18	F.	55.23	57.9
Mar.	2	F.	55.07	39 0.3
	19	F.	55.11	0.2
	29	F.	54.96	0.5
Mean . . .			9 25 55.090	50 38 59.66
Div., Flex., etc.			. .	+ 0.47

ARMAGH 2101.

1874.			h. m. s.	° ′ ″
Mar.	11	S.	9 27 11.63	49 49 13.3
	19	S.	11.74	11.7
	21	E.	11.89	11.7
	25	E.	11.75	13.7
Mean . . .			9 27 11.752	49 49 12.60
Div., Flex., etc.			. .	+ 0.37

DURCH. 37°, 2005.

1874.			h. m. s.	° ′ ″
Mar.	21	Sk.	9 27 21.67	52 28 47.5
	28	Sk.	21.50	49.4
	30	F.	21.59	47.9
Mean . . .			9 27 21.587	52 28 48.27
Div., Flex., etc.			. .	+ 0.71

ANONYMOUS.

1874.			h. m. s.	° ′ ″
Mar.	25	E.	9 27 41.90	52 33 31.5
	29	E.	41.73	31.8*
Mean . . .			9 27 41.815	52 33 31.65
Div., Flex., etc.			. .	+ 0.72

*This has been decreased five revolutions [5 revs. = 76″.56].

ANONYMOUS.

1874.			h. m. s.	° ′ ″
Mar.	19	S.	9 27 51.40	52 33 34.2*
	21	E.	51.85	34.0
	25	E.	51.56	36.0
	29	E.	51.63	34.3†
Mean . . .			9 27 51.610	52 33 34.62
Div., Flex., etc.			. .	+ 0.72

*This has been decreased one revolution [1 rev. = 15″.3].

†This has been decreased five revolutions [5 revs. = 76″.56].

WEISSE (2) 584.

1874.			h. m. s.	° ′ ″
Feb.	18	F.	9 29 16.98	51 38 24.3
	27	S.	17.04	22.2
Mar.	11	S.	16.70	23.7
Mean . . .			9 29 16.907	51 38 23.40
Div., Flex., etc.			. .	+ 0.61

WEISSE (2) 592.

1874.			h. m. s.	° ′ ″
Feb.	11	S.	9 29 34.27	51 31 25.7
Mar.	9	E.	34.37	27.2
	20	Sk.	34.25	26.7
Mean . . .			9 29 34.297	51 31 26.53
Div., Flex., etc.			. .	+ 0.59

ANONYMOUS.

1874.		h. m. s.	° ′ ″
Feb. 11	S.	9 36 29.99	55 42 26.4
18	F.	30.15	26.4
Mar. 2	F.	30.10	26.3
Mean . . .		9 36 30.080	55 42 26.37
Div., Flex., etc.		. .	+ 1.03

IX, 4.

1874.		h. m. s.	° ′ ″
Feb. 27	S.	9 37 48.55	119 13 43.6
Mar. 2	F.	48.46	47.4
9	E.	48.69	. .
Mean . . .		9 37 48.567	119 13 45.50
Div., Flex., etc.		. .	+ 1.60

ANONYMOUS.

1874.		h. m. s.	° ′ ″
Mar. 10	F.	9 38 38.44	122 55 15.2
April 4	S.	38.09	15.7
13	Sk.	38.42	16.6
Mean . . .		9 38 38.317	122 55 15.83
Div., Flex., etc.		. .	+ 1.53

IX, 6.

1874.		h. m. s.	° ′ ″
Mar. 9	E.	9 40 40.41	125 16 48.5
21	E.	40.40	47.5
24	Sk.	40.19	47.9
Mean . . .		9 40 40.333	125 16 47.97
Div., Flex., etc.		. .	+ 1.50

IX, 5.

1874.		h. m. s.	° ′ ″
Mar. 20	Sk.	9 40 50.91	122 55 38.1
25	E.	51.00	39.7
28	Sk.	50.89	38.2
Mean . . .		9 40 50.933	122 55 38.67
Div., Flex., etc.		. .	+ 1.53

ANONYMOUS.

1874.		h. m. s.	° ′ ″
Mar. 29	E.	9 41 5.22	130 3 11.1
Div., Flex., etc.		. .	+ 1.32

IX, 8.

1874.		h. m. s.	° ′ ″
Mar. 29	E.	9 41 28.25	130 5 53.0
April 21	Sk.	28.24	56.5
29	Sk.	28.45	54.1
Mean . . .		9 41 28.313	130 5 54.53
Div., Flex., etc.		. .	+ 1.32

IX, 7.

1874.		h. m. s.	° ′ ″
Mar. 9	E.	9 41 31.35	120 23 23.8
21	E.	31.42	25.9
April 26	E.	31.20	24.1
Mean . . .		9 41 31.323	120 23 24.60
Div., Flex., etc.		. .	+ 1.60

ANONYMOUS.

1874.		h. m. s.	° ′ ″
April 4	S.	9 41 58.55	123 6±

IX, 10.

1874.		h. m. s.	° ′ ″
April 13	Sk.	9 43 2.69	115 49 49.9
21	Sk.	2.62	50.0
Mean . . .		9 43 2.655	115 49 49.95
Div., Flex., etc.		. .	+ 1.59

BESSEL'S ZONES, 354.

1874.		h. m. s.	° ′ ″
Feb. 11	S.	9 43 20.68	58 1 13.6
18	F.	20.82	11.2
27	S.	20.72	12.9
Mean . . .		9 43 20.740	58 1 12.57
Div., Flex., etc.		. .	+ 1.14

IX, 11.

1874.		h. m. s.	° ′ ″
Mar. 10	F.	9 44 29.53	119 18 54.0
April 4	S.	29.67	53.7
13	Sk.	29.63	55.5
Mean . . .		9 44 29.610	119 18 54.40
Div., Flex., etc.		. .	+ 1.60

IX, 12.

1874.		h. m. s.	° ′ ″
Mar. 25	E.	9 44 51.73	129 34 58.7
26	F.	51.68	57.3
29	E.	51.62	55.8
Mean . . .		9 44 51.677	129 34 57.27
Div., Flex., etc.		. .	+ 1.33

IX, 13.

1874.		h. m. s.	° ′ ″
Mar. 2	F.	9 48 9.78	121 30 30.0
9	E.	9.67	29.2
21	E.	9.82	30.3
Mean . . .		9 48 9.757	121 30 29.83
Div., Flex., etc.		. .	+ 1.56

IX, 9.

1874.		h. m. s.	° ′ ″
April 26	E.	9 49 42.59	123 5 41.9
29	Sk.	42.79	39.3
Dec. 4	S.	42.41	38.2
Mean . . .		9 49 42.597	123 5 39.80
Div., Flex., etc.		. .	+ 1.53

IX, 14.

1874.		h. m. s.	° ′ ″
Mar. 9	E.	9 50 28.92	114 28 57.8
Div., Flex., etc.		. .	+ 1.63

DURCH. 15°, 2147.

1874.		h. m. s.	° ′ ″
Mar. 20	Sk.	9 53 30.35	74 56 56.6
24	Sk.	30.26	57.2
25	E.	30.35	57 2.2
Mean . . .		9 53 30.320	74 56 58.67
Div., Flex., etc.		. .	+ 1.21

IX, 15.

1874.		h. m. s.	° ′ ″
Feb. 18	F.	9 56 3.20	127 29 31.9
Mar. 2	F.	3.23	33.8
Mean . . .		9 56 3.215	127 29 32.85
Div., Flex., etc.		. .	+ 1.38

IX, 16.

1874.		h. m. s.	° ′ ″
Feb. 18	F.	9 59 56.26	124 16 14.2
Mar. 2	F.	56.27	16.4
10	F.	56.30	14.2
Mean . . .		9 59 56.277	124 16 14.93
Div., Flex., etc.		. .	+ 1.52

WEISSE 5.

1874.		h. m. s.	° ′ ″
Mar. 30	F.	10 2 50.48	79 47 25.0
April 13	Sk.	50.51	23.0
21	Sk.	50.43	24.8
Mean . . .		10 2 50.473	79 47 24.27
Div., Flex., etc.		. .	+ 1.27

WEISSE (2) 28.

1874.		h. m. s.	° ′ ″
Mar. 11	S.	10 3 37.51	70 28 29.2
21	E.	37.56	29.1
24	Sk.	37.55	29.1
Mean . . .		10 3 37.540	70 28 29.13
Div., Flex., etc.		. .	+ 1.26

ANONYMOUS.

1874.		h. m. s.	° ′ ″
Mar. 2	F.	10 5 3.07	70 26 20.0
Div., Flex., etc.		. .	+ 1.26

X, 1.

1874.		h. m. s.	° ′ ″
Mar. 10	F.	10 6 31.61	130 15 12.9
April 4	S.	31.38	16.2
Mean . . .		10 6 31.495	130 15 14.55
Div., Flex., etc.		. .	+ 1.32

WEISSE 83.

1874.		h. m. s.	° ′ ″
Mar. 30	F.	10 6 52.45	79 51 29.8
April 3	F.	52.39	28.4
13	Sk.	52.46	28.2
Mean . . .		10 6 52.433	79 51 28.80
Div., Flex., etc.		. .	+ 1.27

X, 2.

1874.		h. m. s.	° ′ ″
Mar. 4	Sk.	10 10 19.72	117 59 21.1
9	E.	19.96	20.9
Mean . . .		10 10 19.840	117 59 21.00
Div., Flex., etc.		. .	+ 1.56

GROOMBRIDGE 1620.

1874.		h. m. s.	° ′ ″
Dec. 24	S.	10 10 58.73	5 6 35.7
Div., Flex., etc.		. .	+ 0.82

GROOMBRIDGE 1620, S. P.

1874.			h. m. s.	° ′ ″
Oct.	17	S.	10 10 58.17	354 53 23.2
Nov.	14	S.	58.20	23.2
Mean . . .			10 10 58.185	354 53 23.20
Div., Flex., etc.			. .	+ 0.92

X, 3

1874.			h. m. s.	° ′ ″
Mar.	11	S.	10 13 5.74	126 10 27.6
	25	E.	5.80	30.3
May	7	Sk.	5.59	29.0
Mean . . .			10 13 5.710	126 10 28.97
Div., Flex., etc.			. .	+ 1.45

WEISSE 208.

1874.			h. m. s.	° ′ ″
Feb.	11	S.	10 13 36.66	78 29 56.9
Mar.	2	F.	36.75	59.0
	10	F.	36.65	58.6
Mean . . .			10 13 36.687	78 29 58.17
Div., Flex., etc.			. .	+ 1.25

X, 4.

1874.			h. m. s.	° ′ ″
Mar.	20	Sk.	10 14 38.07	129 4 14.9
	29	E.	38.15	13.2
April	21	Sk.	38.10	11.3
Mean . . .			10 14 38.107	129 4 13.13
Div., Flex., etc.			. .	+ 1.34

ANONYMOUS.

1874.			h. m. s.	° ′ ″
Mar.	21	E.	10 14 50.78	80 17 1.7
	26	F.	50.81	1.0
	30	F.	50.74	0.7
Mean . . .			10 14 50.777	80 17 1.13
Div., Flex., etc.			. .	+ 1.28

RUMKER 3155.

1874.			h. m. s.	° ′ ″
Mar.	24	Sk.	10 15 12.35	78 39 53.4
April	4	S.	12.39	53.9
	20	S.	. .	52.5
	22	E.	12.36	55.5
Mean . . .			10 15 12.367	78 39 53.82
Div., Flex., etc.			. .	+ 1.25

ANONYMOUS.

1874.			h. m. s.	° ′ ″
Feb.	11	S.	10 16 16.96	80 20 10.1
Mar.	21	E.	16.85	8.6
	30	F.	16.77	12.0
Mean . . .			10 16 16.860	80 20 10.23
Div., Flex., etc.			. .	+ 1.28

SCHJELLERUP 3815.

1874.			h. m. s.	° ′ ″
Feb.	18	F.	10 18 26.72	83 47 1.4
Mar.	2	F.	26.69	3.2
	4	Sk.	26.72	1.0
Mean . . .			10 18 26.710	83 47 1.87
Div., Flex., etc.			. .	+ 1.43

X, 5.

1874.			h. m. s.	° ′ ″
Mar.	25	E.	10 18 58.22	122 51 5.3
	29	E.	58.12	6.4
April	13	Sk.	58.26	1.3
Mean . . .			10 18 58.200	122 51 4.33
Div., Flex., etc.			. .	+ 1.53

ANONYMOUS.

1874.			h. m. s.	° ′ ″
Mar.	30	F.	10 19 . .	81 53 19.9
April	3	F.	. .	16.8
	4	S.	2.99	. .
	26	E.	2.89	18.8
	29	Sk.	2.87	19.1
Mean . . .			10 19 2.917	81 53 18.65
Div., Flex., etc.			. .	+ 1.34

WEISSE 338.

1874.			h. m. s.	° ′ ″
Mar.	11	S.	10 20 48.03	85 18 48.1
	21	E.	48.09	48.8
	28	Sk.	48.14	50.1
Mean . . .			10 20 48.087	85 18 49.00
Div., Flex., etc.			. .	+ 1.45

X, 6.

1874.			h. m. s.	° ′ ″
Mar.	20	Sk.	10 21 23.30	120 25 36.3
	24	Sk.	23.32	36.3
	25	E.	23.42	37.1
Mean . . .			10 21 23.347	120 25 36.57
Div., Flex., etc.			. .	+ 1.60

ANONYMOUS.

1874.			h. m. s.	° ′ ″
Mar.	2	F.	10 22 32.13	85 16 44.2
	11	S.	31.96	41.9
	21	E.	32.01	41.5
Mean . . .			10 22 32.033	85 16 42.53
Div., Flex., etc.			. .	+ 1.45

BESSEL'S ZONES 64.

1874.			h. m. s.	° ′ ″
Mar.	7	S.	10 22 59.11	85 27 29.2
	10	F.	59.04	28.7
April	20	S.	. .	26.4
	26	E.	59.11	28.9
Mean . . .			10 22 59.087	85 27 28.30
Div., Flex., etc.			. .	+ 1.45

WEISSE 404.

1874.			h. m. s.	° ′ ″
Mar.	4	Sk.	10 24 0.43	87 12 11.0
	26	F.	0.49	11.2
April	4	S.	0.51	8.2
Mean . . .			10 24 0.477	87 12 10.13
Div., Flex., etc.			. .	+ 1.42

X, 7.

1874.			h. m. s.	° ′ ″
Mar.	25	E.	10 24 57.17	115 50 18.1
April	13	Sk.	57.20	17.1
	21	Sk.	57.14	19.3
Mean . . .			10 24 57.170	115 50 18.17
Div., Flex., etc.			. .	+ 1.59

X, 8.

1874.			h. m. s.	° ′ ″
Mar.	24	Sk.	10 27 57.01	129 35 17.0
	25	E.	57.22	21.7
	29	E.	56.95	18.2
Mean . . .			10 27 57.060	129 35 18.97
Div., Flex., etc.			. .	+ 1.33

X, 9.

1874.			h. m. s.	° ′ ″
Mar.	28	Sk.	10 28 54.77	123 6 52.5
April	21	Sk.	. .	51.1
	22	E.	54.85	50.5
May	7	Sk.	54.73	51.6
Mean . . .			10 28 54.783	123 6 51.42
Div., Flex., etc.			. .	+ 1.53

LAMONT 923.

1874.			h. m. s.	° ′ ″
Feb.	18	F.	10 29 4.21	94 42 39.1
Mar.	2	F.	4.30	39.5
	26	F.	. .	40.6
April	20	S.	. .	38.8
	29	Sk.	4.30	33.7
Mean . . .			10 29 4.270	94 42 39.24
Div., Flex., etc.			. .	+ 1.44

X, 10.

1874.			h. m. s.	° ′ ″
April	13	Sk.	10 30 47.83	117 0 10.1
	21	Sk.	. .	13.5
	22	E.	47.63	13.7
Mean . . .			10 30 47.730	117 0 12.43
Div., Flex., etc.			. .	+ 1.55

X, 11.

1874.			h. m. s.	° ′ ″
Mar.	4	Sk.	10 31 58.44	125 3 56.8
	29	E.	58.52	57.5
Mean . . .			10 31 58.480	125 3 57.15
Div., Flex., etc.			. .	+ 1.51

WEISSE 560.

1874.			h. m. s.	° ′ ″
Mar.	2	F.	10 32 21.34	94 17 21.3
	10	F.	21.34	18.8
	20	Sk.	21.34	20.8
Mean . . .			10 32 21.340	94 17 20.30
Div., Flex., etc.			. .	+ 1.44

ANONYMOUS.

1874.			h. m. s.	° ′ ″
Mar.	26	F.	10 34 11.37	94 46 40.3
Dec.	14	S.	11.25	38.2
	15	F.	10.86	35.2
Mean . . .			10 34 11.167	94 46 37.90
Div., Flex., etc.			. .	+ 1.44

BESSEL'S ZONES 222.

1874.			h. m. s.	° ′ ″
Mar.	7	S.	10 34 29.67	94 53 17.9
Dec.	14	S.	29.67	14.2
	15	F.	29.90	16.0
Mean . . .			10 34 29.747	94 53 16.03
Div., Flex., etc.			. .	+ 1.44

ANONYMOUS.

1874.	h. m. s.	° ′ ″
Mar. 11 S.	10 35 36.19	96 25 46.1
Div., Flex., etc.	. .	+ 1.35

ANONYMOUS.

1874.	h. m. s.	° ′ ″
Mar. 30 F.	10 36 11.12	96 23 29.6
Div., Flex., etc.	. .	+ 1.36

X, 12.

1874.	h. m. s.	° ′ ″
Mar. 28 Sk.	10 36 17.42	114 17 49.1
April 26 E.	17.29	49.9
Mean . . .	10 36 17.355	114 17 49.50
Div., Flex., etc.	. .	+ 1.63

WEISSE 638.

1874.	h. m. s.	° ′ ″
Mar. 2 F.	10 36 40.82	96 13 10.2
10 F.	40.77	8.4
Mean . . .	10 36 40.795	96 13 9.30
Div., Flex., etc.	. .	+ 1.37

ANONYMOUS.

1874.	h. m. s.	° ′ ″
Feb. 18 F.	10 36 57.00	98 24 21.9
Div., Flex., etc.	. .	+ 1.23

X, 13.

1874.	h. m. s.	° ′ ″
Mar. 29 E.	10 37 . .	116 38 18.0
April 22 E.	22.84	18.4
Dec. 17 S.	22.57	16.5
31 F.	22.91	18.0
Mean . . .	10 37 22.773	116 38 17.72
Div., Flex., etc.	. .	+ 1.56

X, 14.

1874.	h. m. s.	° ′ ″
April 26 E.	10 38 25.95	113 19 28.8
Dec. 15 F.	25.86	29.2
Mean . . .	10 38 25.905	113 19 29.00
Div., Flex., etc.	. .	+ 1.62

X, 15.

1874.	h. m. s.	° ′ ″
Mar. 24 Sk.	10 41 10.88	123 59 35.9
28 Sk.	10.89	. .
Mean . . .	10 41 10.885	. .
Div., Flex., etc.	. .	+ 1.52

ANONYMOUS.

1874.	h. m. s.	° ′ ″
Mar, 2 F.	10 44 41.54	104 13 30.0
20 Sk.	41.75	28.7
26 F.	41.73	28.6
Mean . . .	10 44 41.673	104 13 29.10
Div., Flex , etc.	. .	+ 1.28

X, 16.

1874.	h. m. s.	° ′ ″
Mar. 4 Sk.	10 46 40.60	115 54 37.8
Div., Flex., etc.	. .	+ 1.58

X, 17.

1874.	h. m. s.	° ′ ″
Mar. 2 F.	10 48 7.07	125 47 12.4
10 F.	7.24	12.7
24 Sk.	7.23	10.4
Mean . . .	10 48 7.180	125 47 11.83
Div., Flex., etc.	. .	+ 1.47

X, 18.

1874.	h. m. s.	° ′ ″
Feb. 18 F.	10 57 15.92	121 16 55.2
Mar. 4 Sk.	15.93	54.1
Mean . . .	10 57 15.925	121 16 54.65
Div., Flex., etc.	. .	+ 1.57

XI, 1.

1874.	h. m. s.	° ′ ″
Mar. 10 F.	11 3 56.15	114 55 24.9
Div., Flex., etc.	. .	+ 1.63

XI, 2.

1874.	h. m. s.	° ′ ″
Mar. 10 F.	11 11 34.75	124 2 54.9
20 Sk.	34.46	57.6
Mean . . .	11 11 34.605	124 2 56.25
Div., Flex., etc.	. .	+ 1.52

XI, 3.

1874.	h. m. s.	° ′ ″
Mar. 30 F	11 12 32.13	123 3 53.6
April 13 Sk.	32.00	49.9
May 7 Sk.	32.00	53.1
Mean . . .	11 12 32.043	123 3 52.20
Div., Flex., etc.	. .	+ 1.53

XI, 4.

1874.	h. m. s.	° ′ ″
Mar. 26 F.	11 16 53.82	118 12 23.0
30 F.	53.98	20.8
April 21 Sk.	53.95	21.1
Mean . . .	11 16 53.917	118 12 21.63
Div., Flex., etc.	. . .	+ 1.57

ANONYMOUS.

1874.	h. m. s.	° ′ ″
Dec. 14 S.	11 21 28.30	86 28 31.5
17 S.	28.28	31.2
Mean . . .	11 21 28.290	86 28 31.35
Div., Flex., etc.	. .	+ 1.44

XI, 5.

1874.	h. m. s.	° ′ ″
Mar. 20 Sk.	11 22 18.39	121 9 46.6
28 Sk.	18.52	48.8
Mean . . .	11 22 18.455	121 9 47.70
Div., Flex., etc.	. .	+ 1.58

XI, 6.

1874.	h. m. s.	° ′ ″
Mar. 30 F.	11 26 42.01	125 30 46.8
April 26 E.	42.17	43.0
Mean . . .	11 26 42.090	125 30 44.90
Div., Flex., etc.	. .	+ 1.48

XI, 7.

1874.	h. m. s.	° ′ ″
April 21 Sk.	11 28 6.84	130 27 29.5
26 E.	6.99	29.1
Mean . . .	11 28 6.915	130 27 29.30
Div., Flex., etc.	. .	+ 1.31

XI, 8.

1874.	h. m. s.	° ′ ″
Mar. 20 Sk.	11 30 27.71	113 44 26.3
28 Sk.	27.87	26.4
Mean . . .	11 30 27.790	113 44 26.35
Div., Flex., etc.	. .	+ 1.62

XI, 9.

1874.	h. m. s.	° ′ ″
April 26 E.	11 33 58.72	117 47 50.7
May 7 Sk.	58.72	51.4
8 E.	58.87	54.0
Mean . . .	11 33 58.770	117 47 52.03
Div , Flex., etc.	. .	+ 1.56

XI, 10.

1874.	h. m. s.	° ′ ″
Mar. 26 F.	11 37 10.82	126 29 28.8
28 Sk.	10.71	20.9
Mean . . .	11 37 10.765	126 29 24.85
Div., Flex., etc.	. .	+ 1.43

XI, 11.

1874.	h. m. s.	° ′ ″
Mar. 10 F.	11 40 41.63	119 48 1.3
26 F.	41.59	7.0
April 26 E.	41.52	3.3
Mean . . .	11 40 41.580	119 48 3.87
Div., Flex., etc.	. .	+ 1.61

XI, 12.

1874.	h. m. s.	° ′ ″
April 21 Sk.	11 42 23.47	116 2 55.4
May 7 Sk.	23.37	57.2
8 E.	23.63	59.5
Mean . . .	11 42 23.490	116 2 57.37
Div., Flex., etc.	. .	+ 1.58

XI, 13.

1874.	h. m. s.	° ′ ″
May 7 Sk.	11 43 22.66	121 44 40.0
8 E.	22.86	39.8
21 F.	22.82	41.4
Mean . . .	11 43 22.780	121 44 40.40
Div., Flex., etc.	. .	+ 1.56

XI, 14.

1874.		h. m. s.	° ′ ″
Mar. 2	F.	11 46 26.24	127 38 20.8
May 7	Sk.	26.23	19.9
Dec. 14	S.	26.50	16.8
Mean . . .		11 46 26.323	127 38 19.17
Div., Flex., etc.		. .	+ 1.37

XI, 15.

1874.		h. m. s.	° ′ ″
April 21	Sk.	11 48 50.28	117 2 6.0
Div., Flex., etc.		. .	+ 1.55

XI, 16.

1874.		h. m. s.	° ′ ″
Mar. 2	F.	11 50 39.79	122 36 51.0
Div., Flex., etc.		. .	+ 1.54

XIII, 3.

1874.		h. m. s.	° ′ ″
May 8	E.	13 5 48.18	121 11 33.4
Div., Flex., etc.		. .	+ 1.57

XIII, 4.

1874.		h. m. s.	° ′ ″
April 26	E.	13 6 40.37	125 16 30.3
May 8	E.	40.37	31.6
Mean . . .		13 6 40.370	125 16 30.95
Div., Flex., etc.		. .	+ 1.50

XIII, 5.

1874.		h. m. s.	° ′ ″
May 18	S.	13 7 39.55	117 52 0.3
19	Sk.	39.33	1.6
21	F.	39.44	51 59.6
Mean . . .		13 7 39.440	117 52 0.50
Div., Flex., etc.		. .	+ 1.56

XIII, 6.

1874.		h. m. s.	° ′ ″
May 9	F.	13 9 55.18	119 55 33.3
Div., Flex., etc.		. .	+ 1.61

XIII, 7.

1874.		h. m. s.	° ′ ″
May 21	F.	13 14 35.02	124 14 5.6
22	S.	35.15	5.3
Mean . . .		13 14 35.085	124 14 5.45
Div., Flex., etc.		. .	+ 1.52

XIII, 8.

1874.		h. m. s.	° ′ ″
May 11	Sk.	13 15 34.36	115 10 50.8
27	Sk.	34.33	48.2
Mean . . .		13 15 34.345	115 10 49.50
Div., Flex., etc.		. .	+ 1.62

XIII, 9.

1874.		h. m. s.	° ′ ″
May 18	S.	13 17 41.70	123 37 54.6
27	Sk.	41.95	52.2
Mean . . .		13 17 41.825	123 37 53.40
Div., Flex., etc.		. .	+ 1.52

XIII, 11.

1874.		h. m. s.	° ′ ″
May 11	Sk.	13 23 7.59	126 15 50.2
Div., Flex., etc.		. .	+ 1.44

B. A. C. 4526.

1874.		h. m. s.	° ′ ″
May 9	F.	13 26 . .	64 59 52.8
11	Sk.	50.09	52.6
13	F.	49.99	52.1
Mean . . .		13 26 50.040	64 59 52.50
Div., Flex., etc.		. .	+ 1.19

XIII, 13.

1874.		h. m. s.	° ′ ″
May 21	F.	13 27 8.74	128 14 46.2
27	Sk.	8.82	44.7
Mean . . .		13 27 8.780	128 14 45.45
Div., Flex., etc.		. .	+ 1.36

XIII, 14.

1874.		h. m. s.	° ′ ″
May 18	S.	13 27 48.02	126 54 30.9
28	E.	48.19	30.9
June 1	E.	48.03	30.1
Mean . . .		13 27 48.080	126 54 30.63
Div., Flex., etc.		. .	+ 1.40

XIII, 15.

1874.		h. m. s.	° ′ ″
May 21	F.	13 28 37.79	121 43 35.7
June 4	Sk.	37.79	37.9
Mean . . .		13 28 37.790	121 43 36.80
Div., Flex., etc.		. .	+ 1.56

B. A. C. 4540.

1874.		h. m. s.	° ′ ″
June 13	E.	13 29 16.60	34 0 16.2
Div., Flex., etc.		. .	+ 0.64

XIII, 16.

1874.		h. m. s.	° ′ ″
May 28	E.	13 29 53.72	130 15 9.7
June 1	E.	53.61	10.7
4	Sk.	53.45	16.5
Mean . . .		13 29 53.593	130 15 12.30
Div., Flex., etc.		. .	+ 1.32

XIII, 18.

1874.		h. m. s.	° ′ ″
May 27	Sk.	13 30 5.10	117 0 20.1
June 9	E.	4.92	21.0
Mean . . .		13 30 5 010	117 0 20.55
Div., Flex., etc.		. .	+ 1.55

XIII, 19.

1874.		h. m. s.	° ′ ″
May 28	E.	13 31 19.07	113 2 57.7
June 1	E.	18.82	54.4
Mean . . .		13 31 18.945	113 2 56.05
Div., Flex., etc.		. .	+ 1.61

XIII, 21.

1874.		h. m. s.	° ′ ″
May 21	F.	13 31 39.48	122 28 7.0
22	S.	39.52	4.4
Mean . . .		13 31 39.500	122 28 5.70
Div., Flex., etc.		. .	+ 1.54

B. A. C. 4568.

1874.		h. m. s.	° ′ ″
Mar. 7	S.	13 35 57.40	34 40 47.4
Div., Flex., etc.		. .	+ 0.63

B. A. C. 4594.

1874.		h. m. s.	° ′ ″
May 22	S.	13 40 52.32	63 39 51.5
Div., Flex., etc.		. .	+ 1.17

B. A. C. 4605.

1874.		h. m. s.	° ′ ″
Mar. 7	S.	13 41 53.47	34 56 10.9
June 13	E.	53.64	14.3
Mean . . .		13 41 53.555	34 56 12.60
Div., Flex., etc.		. .	+ 0.62

B. A. C. 4643.

1874.		h. m. s.	° ′ ″
May 21	F.	13 46 0.92	6 36 55.0
22	S.	2.22	56.4
June 15	S.	0.88	56.6
18	F.	1.55	. .
22	F.	2.70	55.4
Mean . . .		13 46 1.654	6 36 55.85
Div., Flex., etc.		. .	+ 0.71

B. A. C. 4640.

1874.		h. m. s.	° ′ ″
May 9	F.	13 47 27.35	60 43 51.0
Div., Flex., etc.		. .	+ 1.15

B. A. C. 4684.

1874.		h. m. s.	° ′ ″
May 11	Sk.	13 58 18.36	38 25 17.0
Div., Flex., etc.		. .	+ 0.43

B. A. C. 4723.

1874.		h. m. s.	° ′ ″
May 9	F.	14 8 18.40	60 18 14.5
11	Sk.	18.52	15.7
Mean . . .		14 8 18.460	60 18 15.10
Div., Flex., etc.		. .	+ 1.14

B. A. C. 4728.

1874.		h. m. s.	° ′ ″
Mar. 7	S.	14 9 18.90	47 53 19.3
May 13	F.	18.62	19.2
Mean . . .		14 9 18.760	47 53 19.25
Div., Flex., etc.		. .	+ 0.28

ANONYMOUS.

1874.		h. m. s.	° ′ ″
Mar. 21	F.	14 11 42.05	38 2 59.7
June 9	E.	42.40	3 2.2
13	E.	42.30	2.6
Mean . . .		14 11 42.250	38 3 1.50
Div., Flex., etc.		. .	+ 0.44

B. A. C. 4752.

1874.	h. m. s.	° ′ ″
May 11 Sk.	14 12 52.34	38 6 36.1
June 9 E.	52.64	32.4
13 E.	52.58	33.2
Mean . . .	14 12 52.520	38 6 33.90
Div., Flex., etc.	. .	+ 0.44

GROOMBRIDGE 2097.

1874.	h. m. s.	° ′ ″
May 9 F.	14 13 44.91	50 39 8.1
Div., Flex., etc.	. .	+ 0.47

XIV, 11.

1874.	h. m. s.	° ′ ″
May 18 S.	14 19 1.56	129 18 13.7
Div., Flex., etc.	. .	+ 1.33

XIV, 12.

1874.	h. m. s.	° ′ ″
May 19 Sk.	14 20 41.85	127 59 25.9
Div., Flex., etc.	. .	+ 1.36

B. A. C. 4804.

1874.	h. m. s.	° ′ ″
Mar. 7 S.	14 24 14.91	39 35 23.6
May 9 F.	14.70	24.8
Mean . . .	14 24 14.805	39 35 24.20
Div., Flex., etc.	. .	+ 0.39

B. A. C. 4808.

1874.	h. m. s.	° ′ ″
May 9 F.	14 26 23.95	59 4 25.8
Div., Flex., etc.	. .	+ 1.14

B. A. C. 4825.

1874.	h. m. s.	° ′ ″
May 21 F.	14 29 29.24	52 49 10.0
22 S.	29.50	10.7
Mean . . .	14 29 29.370	52 49 10.35
Div., Flex., etc.	. .	+ 0.75

B. A. C. 4841.

1874.	h. m. s.	° ′ ″
May 9 F.	14 33 28.48	45 48 48.3
Div., Flex., etc.	. .	+ 0.27

B. A. C. 4847[1].

1874.	h. m. s.	° ′ ″
Mar. 7 S.	14 34 48.39	73 2 . .
May 11 Sk.	48.36	25.0
13 F.	48.16	23.3
Mean . . .	14 34 48.303	73 2 24.15
Div., Flex., etc.	. .	+ 1.21

B. A. C. 4847[2].

1874.	h. m. s.	° ′ ″
Mar. 7 S.	14 34 49 01	73 2 . .
May 11 Sk.	48.83	25.8
13 F.	48.59	23.6
Mean . . .	14 34 48.810	73 2 24.70
Div., Flex., etc.	. .	+ 1.21

B. A. C. 4863.

1874.	h. m. s.	° ′ ″
May 19 Sk.	14 37 33.70	52 42 19.2
21 F.	33.63	18.6
26 S.	33.55	20.7
Mean . . .	14 37 33.627	52 42 19.50
Div., Flex., etc.	. .	+ 0.74

B. A. C. 4874.

1874.	h. m. s.	° ′ ″
May 21 F.	14 38 54.76	28 12 1.4
22 S.	54.85	1.3
28 E.	55.27	0.0
Mean . . .	14 38 54.960	28 12 0.90
Div, Flex., etc.	. .	+ 0.74

B. A. C. 4885.

1874.	h. m. s.	° ′ ″
May 19 Sk.	14 40 44.55	47 5 16.4
26 S.	44.42	17.4
Mean . . .	14 40 44.485	47 5 16.90
Div., Flex., etc.	. .	+ 0.28

XIV, 22.

1874.	h. m. s.	° ′ ″
May 21 F.	14 42 14.48	126 52 8.5
Div., Flex., etc.	. .	+ 1.40

B. A. C. 4897.

1874.	h. m. s.	° ′ ″
May 11 Sk.	14 44 9.98	51 40 7.1
27 Sk.	9.92	5.4
June 4 Sk.	9.97	6.6
Mean . . .	14 44 9.957	51 40 6.37
Div., Flex., etc.	. .	+ 0.61

B. A. C. 4905.

1874.	h. m. s.	° ′ ″
May 19 Sk.	14 45 34.76	70 22 29.3
28 E.	. .	28.5
June 1 E.	34.81	28.5
9 E.	34.82	29.0
Mean . . .	14 45 34.797	70 22 28.82
Div., Flex., etc.	. .	+ 1.26

XIV, 24.

1874.	h. m. s.	° ′ ″
June 1 E.	14 48 1.14	123 20 30.0
Div., Flex., etc.	. .	+ 1.53

B. A. C. 4918.

1874.	h. m. s.	° ′ ″
June 9 E.	14 48 15.01	30 11 38.9
13 E.	14.86	35.6
Mean . . .	14 48 14.935	30 11 37.25
Div., Flex., etc.	. .	+ 0.76

XIV, 25.

1874.	h. m. s.	° ′ ″
June 4 Sk.	14 49 11.35	111 28 25.4
Div., Flex., etc.	. .	+ 1.51

XIV, 26.

1874.	h. m. s.	° ′ ″
June 9 E.	14 49 33.98	115 46 20.1
Div., Flex., etc.	. .	+ 1.59

XIV, 27.

1874.	h. m. s.	° ′ ″
May 27 Sk.	14 49 42.85	118 38 44.9
June 1 E.	42.94	45.6
Mean . . .	14 49 42.895	118 38 45.25
Div., Flex., etc.	. .	+ 1.59

B. A. C. 4942.

1874.	h. m. s.	° ′ ″
May 11 Sk.	14 54 36.03	49 51 16.3
19 Sk.	36.08	13.5
Mean . . .	14 54 36.055	49 51 14.90
Div., Flex., etc.	. .	+ 0.37

B. A. C. 4952.

1874.	h. m. s.	′ ″
May 11 Sk.	14 56 20.76	42 13 26.2
Div., Flex., etc.	. .	+ 0.29

B. A. C. 4980.

1874.	h. m. s.	° ′ ″
May 18 S.	15 1 15.33	41 21 40.6
19 Sk.	15.48	38.9
27 Sk.	15.54	40.0
28 E.	15.46	38.8
Mean . . .	15 1 15.452	41 21 29.58
Div., Flex., etc.	. .	+ 0.32

XV, 2.

1874.	h. m. s.	° ′ ″
May 21 F.	15 1 27.39	120 12 . .

XV, 3.

1874.	h. m. s.	° ′ ″
May 28 E.	15 2 30.45	113 30 7.9
Div., Flex., etc.	. .	+ 1.62

B. A. C. 5000.

1874.	h. m. s.	° ′ ″
June 4 Sk.	15 5 32.71	56 26 34.0
Div., Flex., etc.	. .	+ 1.10

B. A. C. 5001.

1874.	h. m. s.	° ′ ″
May 27 Sk.	15 5 35.96	60 17 29.7
28 E.	35.78	29.6
June 1 E.	36.06	30.6
Mean . . .	15 5 35.933	60 17 29.97
Div., Flex., etc.	. .	+ 1.14

XV, 4.

1874.	h. m. s.	° ′ ″
May 21 F.	15 10 58.23	120 44 42.3
27 Sk.	58.17	44.9
June 1 E.	58.22	42.8
Mean . . .	15 10 58.207	120 44 43.33
Div., Flex., etc.	. .	+ 1.59

XV, 5.

1874.		h. m. s.	° ′ ″
May 28	E.	15 11 30.26	123 34 11.0
June 13	E.	30.57	10.8
Mean . . .		15 11 30.415	123 34 10.90
Div., Flex., etc.		. .	+ 1.52

XV, 6.

1874.		h. m. s.	° ′ ″
May 21	F.	15 12 56.54	117 49 36.9
29	F.	56.49	36.1
Mean . . .		15 12 56.515	117 49 36.50
Div., Flex., etc.		. .	+ 1.56

XV, 7.

1874.		h. m. s.	° ′ ″
May 28	E.	15 13 23.04	127 45 37.4
Div., Flex., etc.		. .	+ 1.37

B. A. C. 5071.

1874.		h. m. s.	° ′ ″
May 28	E.	15 16 22.98	37 35 11.2
June 4	Sk.	22.93	12.0
Mean . . .		15 16 22.955	37 35 11.60
Div., Flex , etc.		. .	+ 0.46

B. A. C. 5072.

1874.		h. m. s.	° ′ ″
May 18	S.	15 16 45.81	56 36 49.5
June 1	E.	45.87	50.3
13	E.	45.93	51.3
Mean . . .		15 16 45.870	56 36 50.37
Div., Flex., etc.		. .	+ 1.11

B. A. C. 5075.

1874.		h. m. s.	° ′ ″
June 13	E.	15 17 59.93	59 15 23.7
17	E.	59.99	21.7
29	E.	59.93	21.2
Mean . . .		15 17 59.950	59 15 22.20
Div., Flex., etc.		. .	+ 1.14

XV, 9.

1874.		h. m. s.	° ′ ″
May 21	F.	15 18 48.11	110 56 5.2
June 1	E.	48.19	5.0
18	F.	48.12	6.8
24	Sk.	48.20	5.8
Mean . . .		15 18 48.155	110 56 5.70
Div., Flex., etc.		. .	+ 1.46

XV, 10.

1874.		h. m. s.	° ′ ″
June 17	E.	15 19 14.48	126 19 22.4
18	F.	14.42	22.2
Mean . . .		15 19 14.450	126 19 22.30
Div., Flex., etc.		. .	+ 1.44

B. A. C. 5091.

1874.		h. m. s.	° ′ ″
May 11	Sk.	15 20 32.29	26 12 29.5
June 22	F.	32.81	29.5
29	E.	32.47	28.1
Mean . . .		15 20 32.523	26 12 29.03
Div., Flex., etc.		. .	+ 0.77

B. A. C. 5098.

1874.		h. m. s.	° ′ ″
May 18	S.	15 22 37.93	60 27 29.5
June 1	E.	37.99	29.8
13	E.	38.22	30.4
Mean . . .		15 22 38.047	60 27 29.90
Div., Flex., etc.		. .	+ 1.14

XV, 11.

1874.		h. m. s.	° ′ ″
May 21	F.	15 23 2.59	125 12 14.1
28	E.	2.72	16.1
Mean . . .		15 23 2.655	125 12 15.10
Div., Flex., etc.		. .	+ 1.50

XV, 12.

1874.		h. m. s.	° ′ ″
June 17	E.	15 24 5.61	117 58 . .

B. A. C. 5113.

1874.		h. m. s.	° ′ ″
June 13	E.	15 25 22.78	41 51 11.3
19	S.	. .	10.3
July 7	E.	22.80	11.0
Mean . . .		15 25 22.790	41 51 10.87
Div., Flex., etc.		. .	+ 0.30

B. A. C. 5116.

1874.		h. m. s.	° ′ ″
June 17	E.	15 25 26.91	27 17 15.4
24	Sk.	26.47	15.9
July 15	E.	26.96	15.6
Mean . . .		15 25 26.780	27 17 15.63
Div., Flex., etc.		. .	+ 0.73

XV, 13.

1874.		h. m. s.	° ′ ″
May 29	F.	15 25 36.87	115 22 11.4
Div., Flex., etc.		. .	+ 1.61

XV, 14.

1874.		h. m. s.	° ′ ″
May 27	Sk.	15 26 5.23	128 55 15.5
June 1	E.	5.24	15.1
Mean . . .		15 26 5.235	128 55 15.30
Div , Flex., etc.		. .	+ 1.34

XV, 15.

1874.		h. m. s.	° ′ ″
June 13	E.	15 28 17.36	122 40 11.2
Div., Flex., etc.		. .	+ 1.54

XV, 16.

1874.		h. m. s.	° ′ ″
May 18	S.	15 29 42.95	117 3 13.8
28	E.	42.80	14.0
July 7	E.	42.93	13.3
Mean . . .		15 29 42.893	117 3 13.70
Div., Flex., etc.		. .	+ 1.55

B. A. C. 5146.

1874.		h. m. s.	° ′ ″
May 11	Sk.	15 29 50.15	71 55 24.4
June 1	E.	50.17	21.8
July 15	E.	50.32	23.5
Mean . . .		15 29 50.213	71 55 23.23
Div., Flex., etc.		. .	+ 1.21

B. A. C. 5157.

1874.		h. m. s.	° ′ ″
May 26	S.	15 30 50.90	46 24 50.6
July 18	E.	50.84	50.0
Mean . . .		15 30 50.870	46 24 50.30
Div., Flex., etc.		. .	+ 0.27

XV, 17.

1874.		h. m. s.	° ′ ″
June 18	F.	15 31 58.22	117 13 48.1
22	F.	58.46	49.0
July 7	E.	58.30	47.7
15	E.	58.48	48.4
Mean . . .		15 31 58.365	117 13 48.30
Div., Flex., etc.		. .	+ 1.55

XV, 18.

1874.		h. m. s.	° ′ ″
May 28	E.	15 32 45.60	129 34 15.2
June 19	S.	45.78	14.6
July 18	E.	45.88	18.5
Mean . . .		15 32 45.753	129 34 16.10
Div., Flex., etc.		. .	+ 1.33

XV, 21.

1874.		h. m. s.	° ′ ″
June 29	E.	15 33 23.17	111 11 39.2
July 19	E.	23.20	39.9
Mean . . .		15 33 23.185	111 11 39.55
Div., Flex., etc.		. .	+ 1.49

XV, 19.

1874.		h. m. s.	° ′ ″
May 27	Sk.	15 33 53.16	121 26 17.5
June 1	E.	53.13	18.7
July 7	E.	53.08	17.6
Mean . . .		15 33 53.123	121 26 17.93
Div., Flex., etc.		. .	+ 1.57

XV, 20.

1874.		h. m. s.	° ′ ″
June 17	E.	15 34 8.43	119 44 18.1
24	Sk.	8.30	16.8
Mean . . .		15 34 8.365	119 44 17.45
Div., Flex., etc.		. .	+ 1.61

B. A. C. 5178[1].

1874.		h. m. s.	° ′ ″
May 11	Sk.	15 34 37.46	52 57 10.2
18	S.	37.34	10.4
22	S.	37.66	9.5
June 13	E.	37.54	10.1
Mean . . .		15 34 37.500	52 57 10.05
Div., Flex., etc.		. .	+ 0.76

B. A. C. 5178[2].

1874.		h. m. s.	° ′ ″
May 11	Sk.	15 34 38.03	52 57 15.2
22	S.	38.10	14.3
June 13	E.	38.00	13.2
Mean . . .		15 34 38.043	52 57 14.23
Div., Flex., etc.		. .	+ 0.76

XV, 22.

1874.		h. m. s.	° ′ ″
May 26	S.	15 38 32.84	117 39 49.3
June 1	E.	32.79	49.2
Mean . . .		15 38 32.815	117 39 49.25
Div., Flex., etc.		. .	+ 1.56

XV, 23.

1874.		h. m. s.	° ′ ″
May 18	S.	15 40 2.38	110 4 17.5
June 17	E	2.36	19.0
19	S.	2.31	17.7
Mean . . .		15 40 2.350	110 4 18.07
Div., Flex., etc.		. .	+ 1.40

XV, 24.

1874.		h. m. s.	° ′ ″
May 29	F.	15 40 58.59	113 26 31.3
June 18	F.	58.64	32.2
Mean . . .		15 40 58.615	113 26 31.75
Div., Flex., etc.		. .	+ 1.62

B. A. C. 5234.

1874.		h. m. s.	° ′ ″
May 11	Sk.	15 43 4.15	71 28 4.1
June 13	E.	4.18	3.8
Mean . . .		15 43 4.165	71 28 3.95
Div., Flex., etc.		. .	+ 1.23

B. A. C. 5249.

1874.		h. m. s.	° ′ ″
May 27	Sk.	15 44 44.86	27 0 36.4
June 17	E.	45.08	35.8
22	F.	45.18	37.0
Mean . . .		15 44 45.040	27 0 36.40
Div., Flex., etc.		. .	+ 0.73

B. A. C. 5252.

1874.		h. m. s.	° ′ ″
May 18	S.	15 45 43.82	68 38 28.8
June 13	E.	43.96	29.6
22	F.	43.97	30.6
Mean . . .		15 45 43.917	68 38 29.67
Div., Flex., etc.		. .	+ 1.27

B. A. C. 5259.

1874.		h. m. s.	° ′ ″
May 11	Sk.	15 46 28.93	53 57 2.2
June 17	E.	29.21	1.6
18	F.	29.13	0.8
Mean . . .		15 46 29.090	53 57 1.53
Div., Flex., etc.		. .	+ 0.86

B. A. C. 5271.

1874.		h. m. s.	° ′ ″
May 28	E.	15 48 19.28	47 11 40.3
June 19	S.	. .	39.8
24	Sk.	19.16	40.2
Mean . . .		15 48 19.220	47 11 40.10
Div., Flex., etc.		. .	+ 0.28

XV, 25.

1874.		h. m. s.	° ′ ″
May 28	E.	15 49 28.62	119 37 31.2
Div., Flex., etc.		. .	+ 1.61

ANONYMOUS.

1874.		h. m. s.	° ′ ″
May 26	S.	15 51 10.23	119 37 16.0
Div., Flex., etc.		. .	+ 1.61

ANONYMOUS.

1874.		h. m. s.	° ′ ″
May 26	S.	15 51 23.99	119 36 48.3
Div., Flex., etc.		. .	+ 1.61

B. A. C. 5307.

1874.		h. m. s.	° ′ ″
May 11	Sk.	15 53 22.95	30 43 27.5
June 17	E.	23.30	27.3
Mean . . .		15 53 23.125	30 43 27.40
Div., Flex., etc.		. .	+ 0.74

XV, 27.

1874.		h. m. s.	° ′ ″
May 28	E.	15 53 23.96	116 41 16.0
29	F.	23.99	15.7
June 13	E.	24.29	15.3
Mean . . .		15 53 24.080	116 41 15.67
Div., Flex., etc.		. .	+ 1.56

B. A. C. 5319.

1874.		h. m. s.	° ′ ″
May 27	Sk.	15 56 13.66	56 18 53.0
June 24	Sk.	13.60	55.2
Mean . . .		15 56 13.630	56 18 54.10
Div., Flex., etc.		. .	+ 1.09

B. A. C. 5322.

1874.		h. m. s.	° ′ ″
June 1	E.	15 56 52.21	66 50 38.9
17	E.	52.12	38.6
29	E.	52.16	39.8
Mean . . .		15 56 52.163	66 50 39.10
Div., Flex., etc.		. .	+ 1.22

B. A. C. 5348.

1874.		h. m. s.	° ′ ″
May 28	E.	15 59 31.72	31 5 50.4
Div., Flex., etc.		. .	+ 0.73

XVI, 1.

1874.		h. m. s.	° ′ ″
May 27	Sk.	16 0 26.98	115 59 11.6
Div., Flex., etc.		. .	+ 1.58

B. A. C. 5355.

1874.		h. m. s.	° ′ ″
May 18	S.	16 4 21.76	53 11 14.0
28	E.	21.87	15.4
29	E.	21.95	15.2
Mean . . .		16 4 21.860	53 11 14.87
Div., Flex., etc.		. .	+ 0.79

B. A. C. 5388.

1874.		h. m. s.	° ′ ″
May 26	S.	16 4 47.96	44 44 0.4
June 1	E.	48.12	1.0
24	Sk.	48.04	1.9
Mean . . .		16 4 48.040	44 44 1.10
Div., Flex., etc.		. .	+ 0.31

XVI, 2.

1874.		h. m. s.	° ′ ″
May 29	F.	16 6 16.13	111 4 31.8
June 13	E.	16.19	32.4
29	E.	16.14	34.2
Mean . . .		16 6 16.153	111 4 32.80
Div., Flex., etc.		. .	+ 1.48

B. A. C. 5400.

1874.		h. m. s.	° ′ ″
June 17	E.	16 6 19.26	45 50 37.3
July 15	E.	19.36	36.7
Mean . . .		16 6 19.310	45 50 37.00
Div., Flex., etc.		. .	+ 0.27

B. A. C. 5426.

1874.		h. m. s.	° ′ ″
May 18	S.	16 9 53.58	70 52 18.7
26	S.	53.70	18.2
June 17	E.	53.63	20.8
July 7	E.	53.62	20.1
Mean . . .		16 9 53.632	70 52 19.45
Div., Flex., etc.		. .	+ 1.24

B. A. C. 5432[1].

1874.		h. m. s.	° ′ ″
July 15	E.	16 9 57.53	55 49 18.6
Div., Flex., etc.		. .	+ 1.05

B. A. C. 5432[2].

1874.		h. m. s.	° ′ ″
June 24	Sk.	16 9 57.64	55 49 13.7
July 15	E.	57.54	14.6
Mean . . .		16 9 57.590	55 49 14.15
Div., Flex., etc.		. .	+ 1.05

XVI, 3.

1874.		h. m. s.	° ′ ″
May 29	F.	16 10 29.03	117 43 43.5
July 23	E.	29.38	42.4
Mean . . .		16 10 29.205	117 43 42.95
Div., Flex., etc.		. .	+ 1.56

XVI, 4.

1874.			h. m. s.	° ′ ″
June	13	E.	16 13 3.42	113 51 47.2
	22	F.	3.49	46.5
July	17	S.	3.41	46.6
Mean . . .			16 13 3.440	113 51 46.77
Div., Flex., etc.			. .	+ 1.63

XVI, 5.

1874.			h. m. s.	° ′ ″
June	17	E.	16 13 59.94	129 54 41.3
	29	E.	59.80	32.1
July	7	E.	59.73	. .
	8	Sk.	59.58	34.2
Mean . . .			16 13 59.762	129 54 35.87
Div., Flex., etc.			. .	+ 1.32

B. A. C. 5459.

1874.			h. m. s.	° ′ ″
May	18	S.	16 15 9.16	29 56 18.8
	26	S.	9.21	19.1
Mean . . .			16 15 9.185	29 56 18.95
Div., Flex., etc.			. .	+ 0.77

B. A. C. 5479.

1874.			h. m. s.	° ′ ″
May	29	F.	16 17 36.77	55 54 11.4
July	7	E.	36.97	10.4
	23	E.	36.91	11.4
Mean . . .			16 17 36.883	55 54 11.07
Div., Flex., etc.			. .	+ 1.06

B. A. C. 5480.

1874.			h. m. s.	° ′ ″
May	29	F.	16 17 44.40	56 0 7.4
June	17	E.	44.45	6.7
Aug.	3	S.	44.42	7.8
Mean . . .			16 17 44.423	56 0 7.30
Div., Flex., etc.			. .	+ 1.07

XVI, 6.

1874.			h. m. s.	° ′ ″
June	22	F.	16 19 36.87	119 0 1.8
	29	E.	36.90	3.2
July	17	S.	37.00	4.4
Mean . . .			16 19 36.923	119 0 3.13
Div., Flex., etc.			. .	+ 1.60

XVI, 7.

1874.			h. m. s.	° ′ ″
July	23	E.	16 19 46.32	111 49 44.9
Div., Flex., etc.			. .	+ 1.54

B. A. C. 5497.

1874.			h. m. s.	° ′ ″
May	18	S.	16 20 53.36	45 1 16.5
July	30	E.	53.73	16.7
Aug.	3	S.	53.49	17.3
Mean . . .			16 20 53.527	45 1 16.83
Div., Flex., etc.			. .	+ 0.31

XVI, 8.

1874.			h. m. s.	° ′ ″
June	13	E.	16 21 43.20	119 35 10.0
	17	E.	43.06	9.2
Mean . . .			16 21 43.130	119 35 9.60
Div., Flex., etc.			. .	+ 1.61

XVI, 9.

1874.			h. m. s.	° ′ ″
June	24	Sk.	16 22 48.95	116 53 52.9
July	7	E.	49.06	53.8
Mean . . .			16 22 49.005	116 53 53.35
Div., Flex., etc.			. .	+ 1.55

XVI, 10.

1874.			h. m. s.	° ′ ″
June	29	E.	16 24 40.17	111 11 40.9
July	7	E.	40.28	39.9
Mean . . .			16 24 40.225	111 11 40.40
Div., Flex., etc.			. .	+ 1.49

XVI, 11.

1874.			h. m. s.	° ′ ″
May	29	F.	16 25 34.15	125 16 22.2
June	13	E.	34.52	22.5
Mean . . .			16 25 34.335	125 16 22.35
Div., Flex., etc.			. .	+ 1.50

B. A. C. 5532.

1874.			h. m. s.	° ′ ″
May	26	S.	16 26 42.57	78 14 22.1
June	17	E.	42.58	21.3
Mean . . .			16 26 42.575	78 14 21.70
Div., Flex., etc.			. .	+ 1.24

B. A. C. 5541.

1874.			h. m. s.	° ′ ″
June	22	F.	16 28 34.57	59 14 5.4
July	15	E.	34.71	6.6
Mean . . .			16 28 34.640	59 14 6.00
Div., Flex., etc.			. .	+ 1.14

B. A. C. 5549.

1874.			h. m. s.	° ′ ″
June	24	Sk.	16 29 37.65	39 35 31.9
July	7	E.	37.68	32.1
Mean . . .			16 29 37.665	39 35 32.00
Div., Flex., etc.			. .	+ 0.39

XVI, 12.

1874.			h. m. s.	° ′ ″
May	29	F.	16 29 56.63	128 53 40.8
June	29	E.	56.77	42.9
Mean . . .			16 29 56.700	128 53 41.85
Div., Flex., etc.			. .	+ 1.34

B. A. C. 5560.

1874.			h. m. s.	° ′ ″
June	13	E.	16 30 39.06	28 54 42.7
July	17	S.	38.80	42.9
	30	E.	39.42	41.8
Aug.	4	E.	38.92	42.4
Mean . . .			16 30 39.050	28 54 42.45
Div., Flex., etc.			. .	+ 0.76

XVI, 13.

1874.			h. m. s.	° ′ ″
July	8	Sk.	16 31 21.69	120 12 41.7
	15	E.	21.95	41.2
Aug.	3	S.	21.62	40.3
Mean . . .			16 31 21.753	120 12 41.07
Div., Flex., etc.			. .	+ 1.66

B. A. C. 5568.

1874.			h. m. s.	° ′ ″
July	23	E.	16 32 30.91	43 7 49.9
	30	E.	31.03	46.8
Mean . . .			16 32 30.970	43 7 48.35
Div., Flex., etc.			. .	+ 0.30

B. A. C. 5587.

1874.			h. m. s.	° ′ ″
Aug.	4	E.	16 34 59.40	77 21 29.9
Div., Flex., etc.			. .	+ 1.23

XVI, 14.

1874.			h. m. s.	° ′ ″
June	13	E.	16 35 16.95	127 54 49.3
	29	E.	16.84	46.7
Mean . . .			16 35 16.895	127 51 48.00
Div., Flex., etc.			. .	+ 1.36

XVI, 16.

1874.			h. m. s.	° ′ ″
May	29	F.	16 35 18.25	116 12 53.4
Div., Flex., etc.			. .	+ 1.57

B. A. C. 5596.

1874.			h. m. s.	° ′ ″
July	23	E.	16 35 19.73	40 49 26.5
	30	E.	19.90	26.7
Mean . . .			16 35 19.815	40 49 26.60
Div., Flex., etc.			. .	+ 0.35

XVI, 15.

1874.			h. m. s.	° ′ ″
July	7	E.	16 36 6.79	112 29 41.7
	15	E.	6.92	41.4
Mean . . .			16 36 6.855	112 29 41.55
Div., Flex., etc.			. .	+ 1.58

B. A. C. 5604.

1874.			h. m. s.	° ′ ″
Aug.	4	E.	16 36 32.09	58 10 1.5
Div., Flex., etc.			. .	+ 1.14

XVI, 17.

1874.			h. m. s.	° ′ ″
June	24	Sk.	16 37 7.48	118 16 20.2
Div., Flex., etc.			. .	+ 1.57

XVI, 18.

1874.			h. m. s.	° ′ ″
May	26	S.	16 37 22.14	123 36 42.4
June	29	E.	22.05	42.0
Mean . . .			16 37 22.095	123 36 42.20
Div., Flex., etc.			. .	+ 1.52

XVI, 19.

1874.	h. m. s.	° ′ ″
June 22 F.	16 39 31.74	109 52 3.9
July 30 E.	31.81	1.7
Mean . . .	16 39 31.775	109 52 2.80
Div., Flex., etc.	. .	+ 1.38

B. A. C. 5620.

1874.	h. m. s.	° ′ ″
July 23 E.	16 39 40.29	74 1 11.7
Aug. 3 S.	40.24	11.9
Mean . . .	16 39 40.265	74 1 11.80
Div., Flex., etc.	. .	+ 1.21

B. A. C. 5628.

1874.	h. m. s.	° ′ ″
Aug. 4 E.	16 40 3.00	25 10 15.4
Div., Flex., etc.	. .	+ 0.82

XVI, 20.

1874.	h. m. s.	° ′ ″
July 7 E.	16 40 21.51	120 58 31.3
Div., Flex., etc.	. .	+ 1.58

B. A. C. 5629.

1874.	h. m. s.	° ′ ″
July 30 E.	16 40 24.35	34 4 39.0
Div., Flex., etc.	. .	+ 0.64

XVI, 21.

1874.	h. m. s.	° ′ ″
June 22 F.	16 40 34.53	114 17 55.1
July 15 E.	34.60	55.1
Mean . . .	16 40 34.565	114 17 55.10
Div., Flex., etc.	. .	+ 1.63

B. A. C. 5647.

1874.	h. m. s.	° ′ ″
May 26 S.	16 43 45.70	76 31 0.00
Div., Flex., etc.	. .	+ 1.23

B. A. C. 5658.

1874.	h. m. s.	° ′ ″
June 29 E.	16 44 16.50	34 21 57.4
July 17 S.	16.48	57.6
Mean . . .	16 44 16.490	34 21 57.50
Div., Flex., etc.	. .	+ 0.63

B. A. C. 5677.

1874.	h. m. s.	° ′ ″
June 24 Sk.	16 46 31.84	65 7 47.6
July 8 Sk.	31.77	47.4
Mean . . .	16 46 31.805	65 7 47.50
Div., Flex., etc.	. .	+ 1.19

B. A. C. 5693.

1874.	h. m. s.	″ ′ ″
July 15 E.	16 48 11.42	58 5 16.2
Div., Flex., etc.	. .	+ 1.14

XVI, 23.

1874.	h. m. s.	° ′ ″
June 29 E.	16 49 12.15	112 56 51.1
July 7 E.	12.32	49.1
Mean . . .	16 49 12.235	112 56 50.10
Div., Flex., etc.	. .	+ 1.61

B. A. C. 5706.

1874.	h. m. s.	° ′ ″
July 8 Sk.	16 50 42.07	43 15 21.6
Div., Flex., etc.	. .	+ 0.31

B. A. C. 5717.

1874.	h. m. s.	° ′ ″
July 23 E.	16 52 19.19	29 26 6.0
30 E.	19.42	5.6
Mean . . .	16 52 19.305	29 26 5.80
Div., Flex., etc.	. .	+ 0.76

B. A. C. 5714.

1874.	h. m. s.	″ ′ ″
July 15 E.	16 52 20.70	64 27 2.5
Aug. 3 S.	20.68	4.0
Mean . . .	16 52 20.690	64 27 3.25
Div., Flex., etc.	. .	+ 1.18

XVI, 24.

1874.	h. m. s.	° ′ ″
July 15 E.	16 54 26.13	126 40 33.6
Div., Flex., etc.	. .	+ 1.41

B. A. C. 5740.

1874.	h. m. s.	° ′ ″
July 23 E.	16 55 20.33	24 40 21.4
30 E.	20.57	20.3
Aug. 4 E.	20.25	19.5
Mean . . .	16 55 20.383	24 40 20.40
Div., Flex., etc.	. .	+ 0.83

B. A C. 5745.

1874.	h. m. s.	° ′ ″
July 23 E.	16 55 48.24	24 46 8.5
30 E.	48.63	7.3
Aug. 4 E.	48.17	6.5
Mean . . .	16 55 48.347	24 46 7.43
Div., Flex., etc.	. .	+ 0.83

B. A. C. 5752.

1874.	h. m. s.	° ′ ″
Aug. 15 Sk.	16 57 3.03	33 7 32.8
Div., Flex., etc.	. .	+ 0.66

B. A. C. 5753.

1874.	h. m. s.	° ′ ″
July 15 E.	16 57 51.97	76 12 49.8
30 E.	51.38	. .
Aug. 4 E.	51.77	49.0
Mean . . .	16 57 51.707	76 12 49.40
Div., Flex., etc.	. .	+ 1.22

B. A. C. 5757.

1874.	h. m. s.	° ′ ″
July 15 E.	16 58 10.16	76 14 57.0
30 E.	9.91	. .
Aug. 4 E.	10.12	56.5
Mean . . .	16 58 10.063	76 14 56.75
Div., Flex., etc.	. .	+ 1.22

B. A. C. 5776.

1874.	h. m. s.	° ′ ″
June 1 E.	17 1 29.35	41 1 15.5
29 E.	29.43	16.5
July 8 Sk.	29.11	16.0
Mean . . .	17 1 29.297	41 1 16.00
Div., Flex., etc.	. .	+ 0.34

B. A. C. 5785[1].

1874.	h. m. s.	° ′ ″
June 1 E.	17 2 43.59	35 21 49.0
Div., Flex., etc.	. .	+ 0.60

B. A. C. 5785[2].

1874.	h. m. s.	° ′ ″
June 1 E.	17 2 43.64	35 21 50.3
Div., Flex., etc.	. .	+ 0.60

B. A. C. 5798.

1874.	h. m. s.	° ′ ″
June 29 E.	17 5 50.15	65 36 22.9
July 23 E.	50.21	23.4
Aug. 3 S.	50.19	23.1
Mean . . .	17 5 50 183	65 36 23.13
Div, Flex., etc.	. .	+ 1.20

ANONYMOUS.

1874.	h. m. s.	° ′ ″
July 23 E.	17 6 4.12	65 35 31.9
Aug. 3 S.	4.01	33.4
Mean . . .	17 6 4.065	65 35 32.65
Div., Flex., etc.	. .	+ 1.20

XVII, 1.

1874.	h. m. s.	° ′ ″
May 29 F.	17 13 16.84	121 27 1.7
July 23 E.	17.26	1 7
30 E.	17.08	0.2
Mean . . .	17 13 17.060	121 27 1.20
Div., Flex., etc.	. .	+ 1.57

B. A. C. 5847.

1874.	h. m. s.	° ′ ″
Aug. 15 Sk.	17 13 19.58	52 34 30.1
Div., Flex., etc.	. .	+ 0.72

XVII, 2.

1874.	h. m. s.	° ′ ″
Aug. 4 E.	17 13 27.26	110 58 29.5
Div., Flex., etc.	. .	+ 1.47

B. A. C. 5863.

1874.	h. m. s.	° ′ ″
July 17 S.	17 15 56.68	57 22 6.7
Aug. 19 Sk.	56.74	7.9
Mean . . .	17 15 56.710	57 22 7.30
Div., Flex., etc.	. .	+ 1.13

XVII, 3.

1874.			h. m. s.	° ′ ″
May	29	F.	17 16 3.88	111 35 29.6
Div., Flex., etc.			. .	+ 1.52

XVII, 4.

1874.			h. m. s.	° ′ ″
July	23	E.	17 16 40.84	124 34 31.8
	30	E.	40.83	34.8
Mean . . .			17 16 40.835	124 34 33.30
Div., Flex., etc.			. .	+ 1.51

XVII, 5.

1874.			h. m. s.	° ′ ″
June	1	E.	17 18 12.07	117 28 54.8
July	8	Sk.	11.93	. .
Mean . . .			17 18 12.000	. .
Div., Flex., etc.			. .	+ 1.55

B. A. C. 5886[1].

1874.			h. m. s.	° ′ ″
June	17	E.	17 19 19.81	52 44 8.6
Aug.	4	E.	19.75	8.5
Mean . . .			17 19 19.780	52 44 8.55
Div., Flex., etc.			. .	+ 0.74

B. A. C. 5886[2].

1874.			h. m. s.	° ′ ″
June	17	E.	17 19 20.21	52 44 12.0
Aug.	4	E.	20.02	11.6
	19	Sk.	20.30	12.2
Mean . . .			17 19 20.177	52 44 11.93
Div., Flex., etc.			. .	+ 0.74

B. A. C. 5900.

1874.			h. m. s.	° ′ ″
June	24	Sk.	17 21 22.97	69 48 35.4
July	6	Sk.	22.91	34.8
Mean . . .			17 21 22.940	69 48 35.10
Div., Flex., etc.			. .	+ 1.27

XVII, 6.

1874.			h. m. s.	° ′ ″
May	29	F.	17 22 11.82	127 11 32.3
July	30	E.	11.95	33.4
Aug.	15	Sk.	11.77	33.0
Mean . . .			17 22 11.847	127 11 32.90
Div., Flex., etc.			. .	+ 1.38

XVII, 7.

1874.			h. m. s.	° ′ ″
June	17	E.	17 23 29.20	123 36 11.9
Div., Flex., etc.			. .	+ 1.52

XVII, 8.

1874.			h. m. s.	° ′ ″
July	17	S.	17 23 43.78	113 51 44.2
Div., Flex., etc.			. .	+ 1.63

XVII, 9.

1874.			h. m. s.	° ′ ″
May	29	F.	17 23 57.67	121 27 2.9
July	30	E.	57.79	5.5
Mean . . .			17 23 57.730	121 27 4.20
Div., Flex., etc.			. .	+ 1.57

B. A. C. 5918.

1874.			h. m. s.	° ′ ″
June	1	E.	17 24 11.69	31 14 30.5
Div., Flex., etc.			. .	+ 0.72

B. A. C. 5929.

1874.			h. m. s.	° ′ ″
Aug.	4	E.	17 26 27.58	51 1 19.3
	19	Sk.	27.96	20.4
Mean . . .			17 26 27.770	51 1 19.85
Div., Flex., etc.			. .	+ 0.52

B. A. C. 5939.

1874.			h. m. s.	° ′ ″
June	17	E.	17 28 33.97	76 45 2.6
July	6	Sk.	33.93	0.9
Mean . . .			17 28 33.950	76 45 1.75
Div., Flex., etc.			. .	+ 1.23

B. A. C. 5950.

1874.			h. m. s.	° ′ ″
July	13	S.	17 29 41.26	34 43 43.6
Div., Flex., etc.			. .	+ 0.63

XVII, 10.

1874.			h. m. s.	° ′ ″
July	8	Sk.	17 29 43.75	120 49 . .
	30	E.	43.79	41.2
Mean . . .			17 29 43.770	. .
Div., Flex., etc.			. .	+ 1.59

B. A. C. 5951.

1874.			h. m. s.	° ′ ″
July	13	S.	17 29 46.89	31 44 25.5
Div., Flex., etc.			. .	+ 0.63

XVII, 11.

1874.			h. m. s.	° ′ ″
May	29	F.	17 32 24.15	118 51 1.7
Div., Flex., etc.			. .	+ 1.59

XVII, 12.

1874.			h. m. s.	° ′ ″
June	17	E.	17 35 3.83	110 2 22.3
July	6	Sk.	3.91	20.2
Mean . . .			17 35 3.870	110 2 21.25
Div., Flex., etc.			. .	+ 1.39

XVII, 13.

1874.			h. m. s.	° ′ ″
June	17	E.	17 35 52.82	111 37 8.6
Div., Flex., etc.			. .	+ 1.53

B. A. C. 5990.

1874.			h. m. s.	° ′ ″
Aug.	15	Sk.	17 35 54.60	43 55 33.5
Div., Flex., etc.			. .	+ 0.32

B. A. C. 5988.

1874.			h. m. s.	° ′ ″
July	17	S.	17 35 54.93	65 25 20.1
Div., Flex., etc.			. .	+ 1.19

XVII, 14.

1874.			h. m. s.	° ′ ″
May	29	F.	17 38 0.52	130 20 12.1
July	30	E.	0.76	11.9
Mean . . .			17 38 0.640	130 20 12.00
Div., Flex., etc.			. .	+ 1.32

XVII, 15.

1874.			h. m. s.	° ′ ″
July	30	E.	17 40 2.24	122 37 14.2
Div., Flex., etc.			. .	+ 1.54

XVII, 18.

1874.			h. m. s.	″ ′ ″
May	29	F.	17 40 41.39	128 56 14.7
July	6	Sk.	41.77	17.3
Mean . . .			17 40 41.580	128 56 16.00
Div., Flex., etc.			. .	+ 1.34

B. A. C. 6033.

1874.			h. m. s.	° ′ ″
July	13	S.	17 43 42.74	64 19 59.9
Div., Flex., etc.			. .	+ 1.18

B. A. C. 6036.

1874.			h. m. s.	° ′ ″
Aug.	15	Sk.	17 43 45.23	42 23 10.0*
Div., Flex., etc.			. .	+ 0.29

*The record of this observation is probably ten revolutions too great [10 revs. = 153″.1].

XVII, 21.

1874.			h. m. s.	° ′ ″
June	18	F.	17 44 28.19	124 4 44.7
July	30	E.	28.16	46.5
Mean . . .			17 44 28.175	124 4 45.60
Div., Flex., etc.			. .	+ 1.52

XVII, 20.

1874.			h. m. s.	° ′ ″
June	1	E.	17 44 29.84	125 35 17.4
July	8	Sk.	29.65	15.5
Mean . . .			17 44 29.745	125 35 16.45
Div., Flex., etc.			. .	+ 1.48

B. A. C. 6052.

1874.			h. m. s.	° ′ ″
June	17	E.	17 46 3.77	39 11 15.1
Aug.	19	Sk.	3.79	18.0
Mean . . .			17 46 3.780	39 11 16.55
Div., Flex., etc.			. .	+ 0.40

B. A. C. 6056.

1874.			h. m. s.	° ′ ″
July	17	S.	17 46 45.57	41 34 13.3
Aug.	15	Sk.	45.62	15.3
Mean . . .			17 46 45.595	41 34 14.30
Div., Flex., etc.			. .	+ 0.31

B. A. C. 6073.

1874.	h. m. s.	° ′ ″
June 1 E.	17 50 20.20	63 55 39.2
Div., Flex., etc.	. .	+ 1.17

B. A. C. 6087.

1874.	h. m. s.	° ′ ″
June 1 E.	17 53 40.98	59 47 53.9
Div., Flex., etc.	. .	+ 1.14

ANONYMOUS.

1874.	h. m. s.	° ′ ″
June 18 F.	17 55 16.35	44 30 56.3
24 Sk.	16.24	56.4
July 6 Sk.	16.18	56.6
13 S.	16.44	. .
30 E.	16.52	56.7
Mean . . .	17 55 16.346	44 30 56.50
Div., Flex., etc.	. .	+ 0.31

B. A. C. 6109.

1874.	h. m. s.	° ′ ″
June 17 E.	17 56 20.45	41 29 29.9
July 6 Sk.	20.15	29.7
13 S.	20.45	. .
30 E.	20.51	30.6
Mean . . .	17 56 20.390	44 29 30.07
Div., Flex., etc.	. .	+ 0.32

B. A. C. 6129.

1874.	h. m. s.	° ′ ″
June 17 E.	17 59 51.69	41 32 26.6
July 8 Sk.	51.27	25.7
Mean . . .	17 59 51.480	41 32 26.15
Div., Flex., etc.	. .	+ 0.32

B. A. C. 6134.

1874.	h. m. s.	′ ″
July 30 E.	18 0 . .	67 47 27.4
Aug. 4 E.	43.38	27.6
15 Sk.	43.49	27.2
Mean . . .	18 0 43.435	67 47 27.40
Div., Flex., etc.	. .	+ 1.25

B. A. C. 6147.

1874.	h. m. s.	° ′ ″
July 23 E.	18 2 14.65	59 27 15.6
Aug. 19 Sk.	14.54	15.7
Mean . . .	18 2 14.595	59 27 15.65
Div., Flex., etc.	. .	+ 1.14

B. A. C. 6162.

1874.	h. m. s.	° ′ ″
June 17 E.	18 3 41.17	46 33 11.0
Div., Flex., etc.	. .	+ 0.27

XVIII, 1.

1874.	h. m. s.	° ′ ″
Aug. 4 E.	18 3 57.81	118 55 31.5
Div., Flex., etc.	. .	+ 1.60

XVIII, 2.

1874.	h. m. s.	° ′ ″
Aug. 4 E.	18 4 41.42	120 58 26.7
27 Sk.	41.46	28.3
Mean . . .	18 4 41.410	120 58 27.50
Div., Flex., etc.	. .	+ 1.58

B. A. C. 6178.

1874.	h. m. s.	° ′ ″
Aug. 15 Sk.	18 7 9.67	58 37 27.3
Div., Flex., etc.	. .	+ 1.14

XVIII, 6.

1874.	h. m. s.	° ′ ″
Aug. 4 E.	18 9 24.82	118 41 30.3
Div., Flex., etc.	. .	+ 1.59

XVIII, 7.

1874.	h. m. s.	° ′ ″
July 6 Sk.	18 10 4.27	127 16 2.8
Div., Flex., etc.	. .	+ 1.38

XVIII, 8.

1874.	h. m. s.	° ′ ″
Aug. 27 Sk.	18 11 37.62	130 19 16.7
Div., Flex., etc.	. .	+ 1.31

B. A. C. 6203.

1874.	h. m. s.	′ ″
Aug. 19 Sk.	18 11 43.86	47 52 57.9
Div., Flex., etc.	. .	+ 0.28

XVIII, 10.

1874.	h. m. s.	° ′ ″
Aug. 27 Sk.	18 15 31.55	117 33 44.9
Div., Flex., etc.	. .	+ 1.56

B. A. C. 6251.

1874.	h. m. s.	° ′ ″
June 29 E.	18 18 19.70	68 17 9.0
Div., Flex., etc.	. .	+ 1.27

B. A. C. 6289.

1874.	h. m. s.	° ′ ″
July 30 E.	18 22 4.58	31 16 16.9
Div., Flex., etc.	. .	+ 0.72

XVIII, 13.

1874.	h. m. s.	° ′ ″
June 29 E.	18 25 25.59	126 28 13.1
July 8 Sk.	25.52	13.1
15 E.	25.75	12.9
Mean . . .	18 25 25.620	126 28 13.03
Div., Flex., etc.	. .	+ 1.43

XVIII, 14.

1874.	h. m. s.	° ′ ″
July 13 S.	18 28 58.80	116 23 16.1
15 E.	59.03	17.0
Mean . . .	18 28 58.915	116 23 16.55
Div., Flex., etc.	. .	+ 1.57

B. A. C. 6335.

1874.	h. m. s.	° ′ ″
Aug. 19 Sk.	18 29 18.33	37 58 42.0
27 Sk.	18.34	43.4
Mean . . .	18 29 18.335	37 58 42.70
Div., Flex., etc.	. .	+ 0.44

XVIII, 17.

1874.	h. m. s.	′ ″
July 15 E.	18 33 52.09	115 6 10.0
Div., Flex., etc.	. .	+ 1.62

B. A. C. 6365.

1874.	h. m. s.	° ′ ″
July 8 Sk.	18 35 55.73	51 44 55.3
Div., Flex., etc.	. .	+ 0.62

XVIII, 23.

1874.	h. m. s.	° ′ ″
Sept. 22 F.	18 46 . .	111 30 41.2
Div., Flex., etc.	. .	+ 1.52

XVIII, 24.

1874.	h. m. s.	° ′ ″
July 15 E.	18 48 8.44	119 38 6.3
Div., Flex., etc.	. .	+ 1.61

B. A. C. 6473.

1874.	h. m. s.	° ′ ″
July 8 Sk.	18 50 50.02	48 33 28.5
Aug. 4 E.	50.19	28.1
Mean . . .	18 50 50.105	48 33 28.30
Div., Flex., etc.	. .	+ 0.30

B. A. C. 6475.

1874.	h. m. s.	° ′ ″
July 15 E.	18 51 30.12	46 13 7.3
Aug. 4 E.	30.10	6.7
Mean . . .	18 51 30.110	46 13 7.00
Div., Flex., etc.	. .	+ 0.26

B. A. C. 6491.

1874.	h. m. s.	° ′ ″
July 7 E.	18 54 13.92	57 28 55.0
8 Sk.	13.76	54.7
Mean . . .	18 54 13.840	57 28 54.85
Div., Flex., etc.	. .	+ 1.13

B. A. C. 6542.

1874.	h. m. s.	° ′ ″
July 7 E.	19 1 23.25	65 56 35.0
15 E.	23.17	32.5
Aug. 4 E.	23.21	33.1
Sept. 22 F.	23.23.	34.3
Mean . . .	19 1 23.215	65 56 33.72
Div., Flex., etc.	. .	+ 1.20

B. A. C. 6551.

1874.	h. m. s.	″ ′ ″
Aug. 4 E.	19 2 5.22	36 47 44.7
19 Sk.	5.49	45.7
Sept. 21 E.	. .	43.0
22 F.	5.47	45.9
Mean . . .	19 2 5.393	36 47 44.82
Div., Flex., etc.	. .	+ 0.50

B. A. C. 6566.

1874.	h. m. s.	° ′ ″
July 7 E.	19 5 20.29	39 50 18.4
Div., Flex., etc.	. .	+ 0.38

B. A. C. 6574.

1874.	h. m. s.	° ′ ″
July 15 E.	19 7 12.39	68 39 20.9
Div., Flex., etc.	. .	+ 1.27

B. A. C. 6579[1].

1874.		h. m. s.	° ′ ″
May 5	F.	19 8 49.22	40 22 48.0
Aug. 19	Sk.	49.32	47.5
Mean . . .		19 8 49.270	40 22 47.75
Div., Flex., etc.		. .	+ 0.36

B. A. C. 6579[2].

1874.		h. m. s.	° ′ ″
May 5	F.	19 8 49.93	40 22 41.1
Aug. 19	Sk.	50.13	41.3
Mean . . .		19 8 50.030	40 22 41.20
Div., Flex., etc.		. .	+ 0.36

B. A. C. 6581.

1874.		h. m. s.	° ′ ″
July 15	E.	19 9 28.15	51 4 12.5
Div., Flex., etc.		. .	+ 0.53

XIX, 1.

1874.		h. m. s.	° ′ ″
Aug. 27	Sk.	19 10 9.64	123 22 32.1
Sept. 22	F.	9.52	29.9
Mean . . .		19 10 9.580	123 22 31.00
Div., Flex., etc.		. .	+ 1.53

XIX, 2.

1874.		h. m. s.	° ′ ″
Sept. 18	F.	19 10 15.70	109 10 27.1
21	E.	15.77	27.8
Oct. 3	E.	15.78	27.9
Mean . . .		19 10 15.750	109 10 27.60
Div., Flex., etc.		. .	+ 1.34

B. A. C. 6589.

1874.		h. m. s.	° ′ ″
July 7	E.	19 10 48.06	68 49 50.5
Oct. 16	F.	48.09	49.3
Mean . . .		19 10 48.075	68 49 49.90
Div., Flex., etc.		. .	+ 1.28

XIX, 3.

1874.		h. m. s.	° ′ ″
Sept. 22	F.	19 11 30.84	119 14 51.5
Oct. 3	E.	30.86	50.7
Mean . . .		19 11 30.850	119 14 51.10
Div., Flex., etc.		. .	+ 1.60

XIX, 4.

1874.		h. m. s.	° ′ ″
Aug. 27	Sk.	19 11 40.37	113 47 4.8
Div., Flex., etc.		. .	+ 1.63

B. A. C. 6599.

1874.		h. m. s.	° ′ ″
Sept. 23	S.	19 11 59.75	52 5 20.7
Div., Flex., etc.		. .	+ 0.67

XIX, 5.

1874.		h. m. s.	° ′ ″
June 29	E.	19 13 14.56	115 45 47.9
Div., Flex., etc.		. .	+ 1.59

B. A. C. 6623.

1874.		h. m. s.	° ′ ″
July 8	Sk.	19 14 11.33	36 51 46.9
Sept. 9	F.	11.42	47.9
Mean . . .		19 14 11.375	36 51 47.40
Div., Flex., etc.		. .	+ 0.49

B. A. C. 6635.

1874.		h. m. s.	° ′ ″
May 5	F.	19 16 49.34	35 51 27.6
Div., Flex., etc.		. .	+ 0.57

B. A. C. 6642.

1874.		h. m. s.	° ′ ″
Aug. 19	Sk.	19 18 42.45	73 18 20.6
27	Sk.	42.67	23.6
Mean . . .		19 18 42.560	73 18 22.10
Div., Flex., etc.		. .	+ 1.21

B. A. C. 6654.

1874.		h. m. s.	° ′ ″
Sept. 22	F.	19 19 56.91	70 26 47.4
Oct. 3	E.	56.89	46.9
Mean . . .		19 19 56.900	70 26 47.15
Div., Flex., etc.		. .	+ 1.26

B. A. C. 6659.

1874.		h. m. s.	° ′ ″
Oct. 16	F.	19 20 5.63	39 58 25.1
Div., Flex., etc.		. .	+ 0.38

O. Arg. N. 19238.

1874.		h. m. s.	° ′ ″
Oct. 16	F.	19 21 14.68	40 0 22.3
Div., Flex., etc.		. .	+ 0.38

B. A. C. 6674.

1874.		h. m. s.	° ′ ″
July 7	E.	19 23 27.75	65 35 19.5
Sept. 18	F.	27.91	17.1
Mean . . .		19 23 27.830	65 35 18.30
Div., Flex., etc.		. .	+ 1.20

B. A. C. 6676.

1874.		h. m. s.	° ′ ″
May 5	F.	19 23 . .	65 29 17.4
Aug. 27	Sk.	41.52	23.5
Sept. 18	F.	41.48	22.6
Mean . . .		19 23 41.500	65 29 21.17
Div., Flex., etc.		. .	+ 1.19

B. A. C. 6687.

1874.		h. m. s.	° ′ ″
July 15	E.	19 24 20.96	37 56 7.0
Aug. 19	Sk.	21.01	8.2
Sept. 21	E.	20.75	6.0
Mean . . .		19 24 20.907	37 56 7.07
Div., Flex., etc.		. .	+ 0.44

B. A. C. 6698.

1874.		h. m. s.	° ′ ″
May 5	F.	19 27 . .	55 48 49.8
Sept. 9	F.	5.47	50.2
Mean . . .		. .	55 48 50.00
Div., Flex., etc.		. .	+ 1.05

B. A. C. 6712.

1874.		h. m. s.	° ′ ″
Sept. 21	E.	19 29 2.56	31 40 6.9
24	Sk.	2.30	8.9
Mean . . .		19 29 2.430	31 40 7.90
Div., Flex., etc.		. .	+ 0.70

B. A. C. 6714.

1874.		h. m. s.	° ′ ″
July 17	S.	19 29 50.61	60 48 44.4
Sept. 18	F.	50.55	45.6
Oct. 2	Sk.	50.80	46.9
Mean . . .		19 29 50.653	60 48 45.63
Div., Flex., etc.		. .	+ 1.15

B. A. C. 6717.

1874.		h. m. s.	° ′ ″
July 15	E.	19 30 13.47	41 0 39.3
Oct. 16	F.	13.60	40.2
18	Sk.	13.55	39.1
Mean . . .		19 30 13.540	41 0 39.53
Div., Flex., etc.		. .	+ 0.34

B. A. C. 6718.

1874.		h. m. s.	° ′ ″
Aug. 19	Sk.	19 30 34.81	47 51 45.3
Div., Flex., etc.		. .	+ 0.28

B. A. C. 6721.

1874.		h. m. s.	° ′ ″
Sept. 22	F.	19 31 5.07	42 6 33.1
Oct. 16	F.	. .	32.9
Mean . . .		. .	42 6 33.00
Div., Flex., etc.		. .	+ 0.29

Anonymous.

1874.		h. m. s.	° ′ ″
Oct. 2	Sk.	19 32 9.06	122 45 44.1
Div., Flex., etc.		. .	+ 1.53

B. A. C. 6730.

1874.		h. m. s.	° ′ ″
Aug. 27	Sk.	19 32 33.17	40 2 40.7
Sept. 9	F.	33.44	35.5
Mean . . .		19 32 33.305	40 2 38.10
Div., Flex., etc.		. .	+ 0.38

B. A. C. 6731.

1874.		h. m. s.	° ′ ″
Sept. 21	E.	19 32 . .	45 34 57.3
Oct. 18	Sk.	43.87	57.7
Mean . . .		. .	45 34 57.50
Div., Flex., etc.		. .	+ 0.28

B. A. C. 6734.

1874.		h. m. s.	° ′ ″
Aug. 27	Sk.	19 33 3.75	40 4 9.3
Sept. 9	F.	3.86	10.9
22	F.	3.88	10.9
Mean . . .		19 33 3.830	40 4 10.37
Div., Flex., etc.		. .	+ 0.38

B. A. C. 6763.

1874.		h. m. s.	° ′ ″
Sept. 18	F.	19 38 28.00	39 45 58.3
21	E.	28.13	58.2
Oct. 16	F.	28.05	56.9
Mean . . .		19 38 28.060	39 45 57.80
Div., Flex., etc.		. .	+ 0.39

B. A. C. 6764.

1874.		h. m. s.	° ′ ″
Sept. 18	F.	19 38 30.84	39 46 25.0
21	E.	30.84	24.3
Oct. 16	F.	30.88	24.5
Mean . . .		19 38 30.853	39 46 24.60
Div., Flex., etc.		. .	+ 0.39

B. A. C. 6762.

1874.		h. m. s.	° ′ ″
Oct. 3	E.	19 38 46.28	63 9 51.0
Div., Flex., etc.		. .	+ 1.17

ANONYMOUS.

1874.		h. m. s.	° ′ ″
Oct. 2	Sk.	19 44 10.66	82 24 50.4
Div., Flex., etc.		. .	+ 1.36

B. A. C. 6806.

1874.		h. m. s.	° ′ ″
Aug. 27	Sk.	19 44 59.97	51 36 19.7
Div., Flex., etc.		. .	+ 0.60

B. A. C. 6813.

1874.		h. m. s.	° ′ ″
Aug. 27	Sk.	19 46 6.03	51 36 10.2
Div., Flex., etc.		. .	+ 0.60

XIX, 14.

1874.		h. m. s.	° ′ ″
Oct. 16	F.	19 46 44.97	114 15 8.2
Div., Flex., etc.		. .	+ 1.63

B. A. C. 6879.

1874.		h. m. s.	° ′ ″
Aug. 27	Sk.	19 55 54.75	62 35 37.9
Div., Flex., etc.		. .	+ 1.17

ANONYMOUS.

1874.		h. m. s.	° ′ ″
July 15	E.	19 57 16.90	102 49 38.6
Div., Flex., etc.		. .	+ 1.29

B. A. C. 6895.

1874.		h. m. s.	° ′ ″
Oct. 2	Sk.	19 57 47.69	40 14 44.0
Div., Flex., etc.		. .	+ 0.37

B. A. C. 6912.

1874.		h. m. s.	° ′ ″
May 5	F.	20 1 28.47	66 44 48.9
Aug. 27	Sk.	28.56	53.9
Mean . . .		20 1 28.515	66 44 51.40
Div., Flex., etc.		. .	+ 1.21

B. A. C. 6959.

1874.		h. m. s.	° ′ ″
Sept. 22	F.	20 9 1.51	38 54 51.3
26	F.	1.52	52.9
Mean . . .		20 9 1.515	38 54 52.10
Div., Flex., etc.		. .	+ 0.41

B. A. C. 6962.

1874.		h. m. s.	° ′ ″
Sept. 18	F.	20 9 20.53	43 33 . .
24	Sk.	20.43	52.3
Oct. 10	Sk.	20.42	52.3
Mean . . .		20 9 20.460	43 33 52.30
Div., Flex., etc.		. .	+ 0.31

B. A. C. 6973.

1874.		h. m. s.	° ′ ″
Oct. 2	Sk.	20 10 32.86	62 34 16.1
18	Sk.	32.86	14.0
Mean . . .		20 10 32.860	62 34 15.05
Div., Flex., etc.		. .	+ 1.17

XX, 2.

1874.		h. m. s.	° ′ ″
Aug. 27	Sk.	20 10 35.15	114 45 31.6
Div., Flex., etc.		. .	+ 1.63

XX, 3.

1874.		h. m. s.	° ′ ″
Oct. 16	F.	20 11 24.84	114 17 2.1
Div., Flex., etc.		. .	+ 1.63

B. A. C. 6983.

1874.		h. m. s.	° ′ ″
Oct. 10	Sk.	20 11 34.57	42 40 18.6
20	F.	34.69	16.2
Mean . . .		20 11 34.630	42 40 17.40
Div., Flex., etc.		. .	+ 0.30

XX, 4.

1874.		h. m. s.	° ′ ″
Sept. 25	E.	20 11 43.31	122 7 14.6
Oct. 2	Sk.	43.20	13.5
3	E.	43.38	14.2
Mean . . .		20 11 43.297	122 7 14.10
Div., Flex., etc.		. .	+ 1.55

XX, 5.

1874.		h. m. s.	° ′ ″
Sept. 24	Sk.	20 12 9.84	124 58 34.1
Div., Flex., etc.		. .	+ 1.51

B. A. C. 6986.

1874.		h. m. s.	° ′ ″
Oct. 20	F.	20 12 27.43	50 1 25.5
Div., Flex., etc.		. .	+ 0.38

B. A. C. 6990.

1874.		h. m. s.	° ′ ″
Sept. 22	F.	20 13 8.67	52 21 27.0
26	F.	8 62	27.4
Mean . . .		20 13 8.645	52 21 27.20
Div., Flex., etc.		. .	+ 0.70

B. A. C. 7029.

1874.		h. m. s.	° ′ ″
May 5	F.	20 18 49.69	58 12 54.4
Div., Flex., etc.		. .	+ 1.14

B. A. C. 7041.

1874.		h. m. s.	° ′ ″
Sept. 24	Sk.	20 21 2.70	47 48 23.0
Div., Flex., etc.		. .	+ 0.28

XX, 7.

1874.		h. m. s.	° ′ ″
Aug. 27	Sk.	20 21 40.66	111 19 0.7
Sept. 9	F.	40.56	0.9
18	F.	40.62	1.2
Mean . . .		20 21 40.613	111 19 0.93
Div., Flex., etc.		. .	+ 1.50

B. A. C. 7061.

1874.		h. m. s.	° ′ ″
Sept. 22	F.	20 22 54.20	51 58 20.8
Div., Flex., etc.		. .	+ 0.66

XX, 8.

1874.		h. m. s.	° ′ ″
Sept. 25	E.	20 22 59.83	120 6 36.5
Div., Flex., etc.		. .	+ 1.61

XX, 9.

1874.		h. m. s.	° ′ ″
Sept. 24	Sk.	20 23 13.63	119 31 55.7
26	F.	13.59	58.9
Mean . . .		20 23 13.610	119 31 57.30
Div., Flex., etc.		. .	+ 1.61

B. A. C. 7083.

1874.		h. m. s.	° ′ ″
Sept. 25	E.	20 25 49.83	44 29 54.9
26	F.	49.89	. .
Oct. 2	Sk.	49.82	53.8
Mean . . .		20 25 49.847	44 29 54.36
Div., Flex., etc.		. .	+ 0.32

XX, 10.

1874.		h. m. s.	° ′ ″
Aug. 27	Sk.	20 26 42.83	128 31 8.8
Oct. 2	Sk.	42.63	6.0
3	E.	42.85	7.1
Mean . . .		20 26 42.770	128 31 7.30
Div., Flex., etc.		. .	+ 1.35

B. A. C. 7101.

1874.		h. m. s.	° ′ ″
Sept. 21	E.	20 28 31.05	48 57 22.3
Div., Flex., etc.		. .	+ 0.31

XX, 12.

1874.		h. m. s.	° ′ ″
Sept. 22	F.	20 30 16.67	111 46 17.1
24	Sk.	16.81	15.9
Oct. 3	E.	16.80	15.7
Mean . . .		20 30 16.760	111 46 16.23
Div., Flex., etc.		. .	+ 1.54

XX, 11.

1874.	h. m. s.	° ′ ″
Sept. 25 E.	20 30 21.35	112 52 47.0
Div., Flex., etc.	. .	+ 1.60

B. A. C. 7121.

1874.	h. m. s.	° ′ ″
Sept. 9 F.	20 31 38.38	75 50 31.4
21 E.	38.41	28.8
Mean . . .	20 31 38.395	75 50 30.10
Div., Flex., etc.	. .	+ 1.22

XX, 13.

1874.	h. m. s.	° ′ ″
Aug. 27 Sk.	20 32 25.38	123 52 32.5
Div., Flex., etc.	. .	+ 1.52

B. A. C. 7169.

1874.	h. m. s.	° ′ ″
Sept. 26 F.	20 34 41.93	8 59 . .
Oct. 16 F.	42.11	42.2
20 F.	42.14	44.6
Nov. 4 E.	42.34	39.6
Mean . . .	20 34 42.130	8 59 42.13
Div., Flex., etc.	. .	+ 0.54

B. A. C. 7164.

1874.	h. m. s.	° ′ ″
Sept. 18 F.	20 35 56.55	58 8 21.1
Div., Flex., etc.	. .	+ 1.14

B. A. C. 7178.

1874.	h. m. s.	° ′ ″
Sept. 26 F.	20 36 3.35	9 0 . .
Oct. 16 F.	3.10	35.8
20 F.	3.19	38.2
Nov. 4 E.	3.60	34.2
Mean . . .	20 36 3.310	9 0 36.07
Div., Flex., etc.	. .	+ 0.54

B. A. C. 7176.

1874.	h. m. s.	° ′ ″
Sept. 22 F.	20 37 37.31	29 56 57.3
24 Sk.	37.11	57.2
Oct. 2 Sk.	37.42	59.6
Mean . . .	20 37 37.280	29 56 58.03
Div., Flex., etc.	. .	+ 0.77

B. A. C. 7193.

1874.	h. m. s.	° ′ ″
Aug. 27 Sk.	20 39 58.24	29 51 8.8
Div., Flex., etc.	. .	+ 0.77

B. A. C. 7204.

1874.	h. m. s.	° ′ ″
Sept. 18 F.	20 41 6.85	56 30 1.9
22 F.	6.87	0.5
Oct. 28 F.	6.87	1.7
Mean . . .	20 41 6.863	56 30 1.37
Div., Flex., etc.	. .	+ 1.10

B. A. C. 7213.

1874.	h. m. s.	° ′ ″
Oct. 29 S.	20 42 30.19	53 58 16.3
Div., Flex., etc.	. .	+ 0.86

XX, 16.

1874.	h. m. s.	° ′ ″
Sept. 9 F.	20 44 1.43	118 27 50.1
Oct. 19 E.	1.39	49.9
Mean . . .	20 44 1.410	118 27 50.00
Div., Flex., etc.	. .	+ 1.58

XX, 17.

1874.	h. m. s.	° ′ ″
Oct. 15 E.	20 44 31.93	121 10 0.4
Div., Flex., etc.	. .	+ 1.57

B. A. C. 7241.

1874.	h. m. s.	° ′ ″
Oct. 28 F.	20 45 . .	46 24 52.5
Nov. 4 E.	36.48	50.1
Mean . . .	. .	46 24 51.30
Div., Flex., etc.	. .	+ 0.27

XX, 18.

1874.	h. m. s.	° ′ ″
Sept. 25 E.	20 47 34.12	120 36 58.1
26 F.	34.02	57.4
Oct. 2 Sk.	33.94	57.2
Mean . . .	20 47 34.027	120 36 57.57
Div., Flex., etc.	. .	+ 1.59

B. A. C. 7253.

1874.	h. m. s.	° ′ ″
Sept. 9 F.	20 48 47.50	46 5 18.8
18 F.	47.53	17.1
Oct. 15 E.	47.66	19.9
16 F.	47.45	17.3
18 Sk.	47.40	18.6
Mean . . .	20 48 47.508	46 5 18.34
Div., Flex., etc.	. .	+ 0.26

B. A. C. 7259.

1874.	h. m. s.	° ′ ″
Sept. 25 E.	20 49 26.15	46 5 27.5
Oct. 15 E.	26.11	27.7
16 F.	25.96	26.8
Mean . . .	20 49 26.073	46 5 27.33
Div., Flex., etc.	. .	+ 0.26

B. A. C. 7257.

1874.	h. m. s.	° ′ ″
Oct. 19 E.	20 49 37.95	77 54 42.7
Div., Flex., etc.	. .	+ 1.24

B. A. C. 7372.

1874.	h. m. s.	° ′ ″
Sept. 21 E.	21 8 20.63	80 30 8.1
Div., Flex., etc.	. .	+ 1.29

B. A. C. 7377.

1874.	h. m. s.	° ′ ″
Aug. 27 Sk.	21 8 35.63	30 31 53.2
Sept. 18 F.	35.94	57.8
Mean . . .	21 8 35.785	30 31 55.50
Div., Flex., etc.	. .	+ 0.75

XXI, 4.

1874.	h. m. s.	° ′ ″
Sept. 24 Sk.	21 18 30.04	128 22 16.2
Div., Flex., etc.	. .	+ 1.35

XXI, 5.

1874.	h. m. s.	° ′ ″
Sept. 21 E.	21 19 28.41	112 57 18.4
Div., Flex., etc.	. .	+ 1.61

B. A. C. 7448.

1874.	h. m. s.	° ′ ″
July 30 E.	21 19 44.91	38 53 1.8
Sept. 24 Sk.	44.87	1.8
Mean . . .	21 19 44.890	38 53 1.80
Div., Flex., etc.	. .	+ 0.41

XXI, 7.

1874.	h. m. s.	° ′ ″
Oct. 2 Sk.	21 27 26.86	120 15 13.4
Div., Flex., etc.	. .	+ 1.60

XXI, 8.

1874.	h. m. s.	° ′ ″
July 30 E.	21 27 35.99	124 53 6.1
Sept. 24 Sk.	35.94	4.1
Mean . . .	21 27 35.965	124 53 5.10
Div., Flex., etc.	. .	+ 1.51

XXI, 9.

1874.	h. m. s.	° ′ ″
Sept. 9 F.	21 28 3.33	114 0 48.3
Div., Flex., etc.	. .	+ 1.63

B. A. C. 7512.

1874.	h. m. s.	° ′ ″
Sept. 9 F.	21 30 7.05	38 51 45.0
Oct. 13 S.	7.00	45.6
14 Sk.	6.98	43.7
Mean . . .	21 30 7.010	38 51 44.77
Div., Flex., etc.	. .	+ 0.41

XXI, 10.

1874.	h. m. s.	° ′ ″
July 30 E.	21 31 13.29	130 5 40.7
Sept. 25 E.	13.32	41.0
Oct. 15 E.	13.34	42.2
Mean . . .	21 31 13.317	130 5 41.30
Div., Flex., etc.	. .	+ 1.32

XXI, 11.

1874.	h. m. s.	° ′ ″
Oct. 2 Sk.	21 31 44.65	115 0 52.3
18 Sk.	44.74	51.7
Mean . . .	21 31 44.695	115 0 52.0
Div., Flex., etc.	. .	+ 1.63

XXI, 13.

1874.	h. m. s.	° ′ ″
Oct. 19 E.	21 31 46.91	110 11 26.9
Nov. 12 E.	46.78	28.5
Mean . . .	21 31 46.845	110 11 27.70
Div., Flex., etc.	. .	+ 1.41

XXI, 12.

1874.		h. m. s.	° ′ ″
Sept. 22	F.	21 31 47.42	117 52 11.9
26	F.	47.40	11.8
Oct. 20	F.	47.46	12.8
Mean . . .		21 31 47.427	117 52 12.17
Div., Flex., etc.		. .	+ 1.56

B. A. C. 7520.

1874.		h. m. s.	° ′ ″
Nov. 14	S.	21 31 51.65	71 14 48.2
16	E.	51.78	51.6
Mean . . .		21 31 51.715	71 14 49.90
Div., Flex., etc.		. .	+ 1.23

XXI, 14.

1874.		h. m. s.	° ′ ″
Oct. 18	Sk.	21 32 40.59	115 47 21.5
Div., Flex., etc.		. .	+ 1.59

B. A. C. 7548.

1874.		h. m. s.	° ′ ″
Sept. 25	E.	21 35 38.68	40 53 16.5
Div., Flex., etc.		. .	+ 0.34

B. A. C. 7555.

1874.		h. m. s.	° ′ ″
Sept. 26	F.	21 36 33.13	35 42 0.2
Div., Flex., etc.		. .	+ 0.58

XXI, 15.

1874.		h. m. s.	° ′ ″
Sept. 24	Sk.	21 37 26.18	123 35 55.4
Div., Flex., etc.		. .	+ 1.52

B. A. C. 7560.

1874.		h. m. s.	° ′ ″
Sept. 25	E.	21 37 37.52	39 23 3.9
Div., Flex., etc.		. .	+ 0.40

XXI, 16.

1874.		h. m. s.	° ′ ″
Oct. 16	F.	21 37 57.28	113 8 22.8
Div., Flex., etc.		. .	+ 1.61

B. A. C. 7571.

1874.		h. m. s.	° ′ ″
Oct. 15	E.	21 38 56.46	64 55 59.5
16	F.	56.37	57.0
Nov. 16	E.	56.51	59.5
Mean . . .		21 38 56.447	64 55 58.67
Div., Flex., etc.		. .	+ 1.19

B. A. C. 7585.

1874.		h. m. s.	° ′ ″
Oct. 20	F.	21 40 16.55	67 37 51.7
Nov. 12	E.	16.63	52.4
16	E.	16.63	51.6
Mean . . .		21 40 16.603	67 37 51.90
Div., Flex., etc.		. .	+ 1.25

XXI, 17.

1874.		h. m. s.	° ′ ″
July 30	E.	21 40 20.25	121 28 46.7
Oct. 14	Sk.	20.17	48.0
19	E.	20.37	44.4
Mean . . .		21 40 20.263	121 28 46.37
Div., Flex., etc.		. .	+ 1.57

Weisse (2) 976.

1874.		h. m. s.	° ′ ″
Nov. 12	E.	21 40 33.73	67 37 59.8
16	E.	33.73	38 2.3
Mean . . .		21 40 33.730	67 38 1.05
Div., Flex., etc.		. .	+ 1.25

XXI, 18.

1874.		h. m. s.	° ′ ″
Oct. 19	E.	21 40 56.03	116 27 34.6
Div., Flex., etc.		. .	+ 1.57

B. A. C. 7636.

1874.		h. m. s.	° ′ ″
July 30	E.	21 48 52.48	34 22 49.6
Sept. 22	F.	52.37	45.2
Mean . . .		21 48 52.425	34 22 47.40
Div., Flex., etc.		. .	+ 0.63

XXI, 19.

1874.		h. m. s.	° ′ ″
July 30	E.	21 53 27.17	127 9 30.7
Div., Flex., etc.		. .	+ 1.39

B. A. C. 7664.

1874.		h. m. s.	° ′ ″
Oct. 2	Sk.	21 54 57.05	77 28 56.1
Div., Flex., etc.		. .	+ 1.23

XXI, 20.

1874.		h. m. s.	° ′ ″
July 30	E.	21 55 11.95	122 44 26.9
Sept. 24	Sk.	11.81	23.4
Mean . . .		21 55 11.880	122 44 25.15
Div., Flex., etc.		. .	+ 1.54

B. A. C. 7676.

1874.		h. m. s.	° ′ ″
Sept. 22	F.	21 57 13.74	37 43 30.0
Div., Flex., etc.		. .	+ 0.45

B. A. C. 7683.

1874.		h. m. s.	° ′ ″
Sept. 24	Sk.	21 57 50.55	32 36 24.6
Div., Flex., etc.		. .	+ 0.67

XXII, 1.

1874.		h. m. s.	° ′ ″
Oct. 2	Sk.	22 0 50.60	112 12 20.7
Div., Flex., etc.		. .	+ 1.57

B. A. C. 7708.

1874.		h. m. s.	° ′ ″
Oct. 14	Sk.	22 1 16.14	28 19 54.9
16	F.	. .	57.3
19	E.	16.10	57.0
Nov. 4	E.	16.13	55.0
Mean . . .		22 1 16.123	28 19 56.05
Div., Flex., etc.		. .	+ 0.75

B. A. C. 7712.

1874.		h. m. s.	° ′ ″
Sept. 26	F.	22 1 55.18	68 54 33.4
Oct. 20	F.	55.25	33.3
Mean . . .		22 1 55.215	68 54 33.35
Div., Flex., etc.		. .	+ 1.28

B. A. C. 7736[1].

1874.		h. m. s.	° ′ ″
Sept. 24	Sk.	22 4 19.78	31 19 23.1
Oct. 19	E.	19.91	26.2
Nov. 4	E.	19.99	22.2
Mean . . .		22 4 19.893	31 19 23.83
Div., Flex., etc.		. .	+ 0.72

B. A. C. 7736[2].

1874.		h. m. s.	° ′ ″
Sept. 24	Sk.	22 4 21.85	31 19 39.4
Oct. 19	E.	21.91	41.1
Nov. 4	E.	21.83	38.4
Mean . . .		22 4 21.863	31 19 39.63
Div., Flex., etc.		. .	+ 0.72

B. A. C. 7733.

1874.		h. m. s.	° ′ ″
July 30	E.	22 4 32.90	69 38 24.2
Oct. 20	F.	32.83	25.6
Mean . . .		22 4 32.865	69 38 24.90
Div., Flex., etc.		. .	+ 1.27

B. A. C. 7742.

1874.		h. m. s.	° ′ ″
Nov. 12	E.	22 5 46.25	74 34 46.1
16	E.	46.37	45.6
Mean . . .		22 5 46.310	74 34 45.85
Div., Flex., etc.		. .	+ 1.21

B. A. C. 7749.

1874.		h. m. s.	° ′ ″
Oct. 14	Sk.	22 6 29.26	32 25 9.0
Nov. 16	E.	29.16	9.8
Mean . . .		22 6 29.210	32 25 9.40
Div., Flex., etc.		. .	+ 0.68

B. A. C. 7755.

1874.		h. m. s.	° ′ ″
Nov. 4	E.	22 7 14.23	31 12 22.4
12	E.	14.31	25.1
Mean . . .		22 7 14.270	31 12 23.75
Div., Flex., etc.		. .	+ 0.72

B. A. C. 7778.

1874.		h. m. s.	° ′ ″
July 30	E.	22 10 23.89	33 35 2.1
Sept. 22	F.	24.13	3.0
Oct. 16	F.	23.90	2.3
19	E.	24.09	3.8
Mean . . .		22 10 24.002	33 35 2.80
Div., Flex., etc.		. .	+ 0.65

B. A. C. 7782.

1874.		h. m. s.	° ′ ″
July 30	E.	22 11 53.89	33 2 28.3
Oct. 14	Sk.	53.80	27.0
Mean . . .		22 11 53.845	33 24 27.65
Div., Flex., etc.		. .	+ 0.65

B. A. C. 7799.

1874.		h. m. s.	° ′ ″
July 30	E.	22 15 29.08	33 42 53.5
Div., Flex., etc.		. .	+ 0.65

B. A. C. 7807.

1874.		h. m. s.	° ′ ″
Oct. 14	Sk.	22 17 35.84	69 47 14.4
Div., Flex., etc.		. .	+ 1.27

XXII, 4.

1874.		h. m. s.	° ′ ″
July 30	E.	22 19 5.94	118 39 2.9
Div., Flex., etc.		. .	+ 1.59

B. A. C. 7820.

1874.		h. m. s.	° ′ ″
Sept. 24	Sk.	22 19 24.63	41 9 42.5
26	F.	24.77	. .
Mean . . .		22 19 24.700	
Div., Flex., etc.		. .	+ 0.33

B. A. C. 7851.

1874.		h. m. s.	° ′ ″
Oct. 16	F.	22 23 3.11	4 31 37.5
17	S.	0.88	. .
20	F.	1.80	38.2
29	S.	2.57	34.7
Nov. 6	S.	1.89	39.1
14	S.	1.11	37.6
Mean . . .		22 23 1.893	4 31 37.42
Div., Flex., etc.		. .	+ 0.83

B. A. C. 7851, S. P.

1874.		h. m. s.	° ′ ″
Dec. 9	S.	22 22 59.30	355 28 . .
24	S.	23 0.02	21.9
Mean . . .		22 22 59.660	
Div., Flex., etc.		. .	+ 0.91

B. A. C. 7846.

1874.		h. m. s.	° ′ ″
Sept. 24	Sk.	22 24 26.25	36 23 54.4
Oct. 14	Sk.	26.49	54.0
Mean . . .		22 24 26.370	36 23 54.20
Div., Flex., etc.		. .	+ 0.53

XXII, 7.

1874.		h. m. s.	° ′ ″
July 30	E.	22 28 40.46	114 38 28.7
Div., Flex., etc.		. .	+ 1.63

B. A. C. 78, 5.

1874.		h. m. s.	° ′ ″
Sept. 24	Sk.	22 29 22.01	28 52 19.7
Div., Flex., etc.		. .	+ 0.76

XXII, 8.

1874.		h. m. s.	° ′ ″
July 30	E.	22 30 40.28	119 41 52.1
Sept. 9	F.	40.27	49.7
Oct. 14	Sk.	40.30	50.0
Mean . . .		22 30 40.283	119 41 50.60
Div., Flex., etc.		. .	+ 1.61

XXII, 9.

1874.		h. m. s.	° ′ ″
Sept. 26	F.	22 31 39.13	129 48 33.1
Oct. 16	F.	39.03	31.1
Mean . . .		22 31 39.080	129 48 32.10
Div., Flex., etc.		. .	+ 1.32

XXII, 10.

1874.		h. m. s.	° ′ ″
Oct. 19	E.	22 31 43.99	123 44 8.1
20	F.	44.09	6.0
Mean . . .		22 31 44.040	123 44 7.05
Div., Flex., etc.		. .	+ 1.52

B. A. C. 7893.

1874.		h. m. s.	° ′ ″
Nov. 4	E.	22 32 46.88	71 7 42.8
Div., Flex., etc.		. .	+ 1.24

XXII, 11.

1874.		h. m. s.	° ′ ″
Sept. 24	Sk.	22 35 50.91	128 19 42.7
26	F.	50.90	44.2
Oct. 14	Sk.	51.00	40.6
Mean . . .		22 35 50.937	128 19 42.50
Div., Flex., etc.		. .	+ 1.35

B. A. C. 7923.

1874.		h. m. s.	° ′ ″
Nov. 12	E.	22 37 5.83	60 26 15.1
Div., Flex., etc.		. .	+ 1.14

XXII, 12.

1874.		h. m. s.	° ′ ″
Sept. 26	F.	22 38 . .	115 53 54.5
Oct. 22	Sk.	37.47	55.0
Mean . . .		. .	115 53 54.75
Div., Flex., etc.		. .	+ 1.59

B. A. C. 7937.

1874.		h. m. s.	° ′ ″
Nov. 4	E.	22 39 20.61	71 17 47.7
12	E.	20.53	48.6
Mean . . .		22 39 20.570	71 17 48.15
Div., Flex., etc.		. .	+ 1.23

B. A. C. 7943.

1874.		h. m. s.	° ′ ″
Sept. 22	F.	22 40 24.03	78 28 20.7
Oct. 19	E.	23.91	21.2
Nov. 4	E.	23.97	20.2
Mean . . .		22 40 23.970	78 28 20.70
Div., Flex., etc.		. .	+ 1.25

B. A. C. 7953.

1874.		h. m. s.	° ′ ″
July 30	E.	22 42 23.51	32 10 45.9
Div., Flex., etc.		. .	+ 0.68

XXII, 14.

1874.		h. m. s.	° ′ ″
July 30	E.	22 48 44.73	110 48 35.1
Div., Flex., etc.		. .	+ 1.45

XXII, 16.

1874.		h. m. s.	° ′ ″
Sept. 24	Sk.	22 51 33.73	126 11 32.9
Div., Flex., etc.		. .	+ 1.45

B. A. C. 8023.

1874.		h. m. s.	° ′ ″
Sept. 18	F.	22 56 7.78	48 21 3.9
Div., Flex., etc.		. .	+ 0.29

XXIII, 3.

1874.		h. m. s.	° ′ ″
Sept. 22	F.	23 3 21.38	126 4 52.9
Div., Flex., etc.		. .	+ 1.45

B. A. C. 8076.

1874.		h. m. s.	° ′ ″
Sept. 22	F.	23 4 38.11	47 7 55.6
24	Sk.	38.12	54.0
Mean . . .		23 4 38.115	47 7 54.80
Div., Flex., etc.		. .	+ 0.28

B. A. C. 8158.

1874.		h. m. s.	° ′ ″
Sept. 24	Sk.	23 18 24.59	33 9 21.4
Div., Flex., etc.		. .	+ 0.66

B. A. C. 8213.

1874.		h. m. s.	° ′ ″
Sept. 25	E.	23 27 51.86	3 23 14.4
26	F.	51.48	13.8
Oct. 12	F.	50.34	13.8
Mean . . .		23 27 51.227	3 23 14.00
Div., Flex., etc.		. .	+ 0.81

B. A. C. 8317.

1874.		h. m. s.	° ′ ″
Sept. 23	S.	23 49 15.38	33 17 18.3
Div., Flex., etc.		. .	+ 0.65

XXIII, 16.

1874.		h. m. s.	° ′ ″
Sept. 24	Sk.	23 50 0.33	115 26 18.2
25	E.	0.40	18.6
Mean . . .		23 50 0.365	115 26 18.40
Div., Flex., etc.		. .	+ 1.61

XXIII, 17.

1874.		h. m. s.	° ′ ″
Oct. 12	F.	23 50 58.27	127 24 22.4
14	Sk.	58.07	21.5
Mean . . .		23 50 58.170	127 24 21.95
Div., Flex., etc.		. .	+ 1.38

XXIII, 18.

1874.		h. m. s.	° ′ ″
Sept. 23	S.	23 51 . .	123 53 28.3
24	Sk.	7.45	26.4
Oct. 23	E.	7.71	28.4
26	Sk.	7.37	28.2
Mean . . .		23 51 7.510	123 53 27.82
Div., Flex., etc.		. .	+ 1.52

ANONYMOUS.

1874.		h. m. s.	° ′ ″
Sept. 25	E.	23 52 6.56	127 34 41.8
Oct. 14	Sk.	6.43	42.0
26	Sk.	6.17	47.2
Mean . . .		23 52 6.387	127 34 43.67
Div., Flex., etc.		. .	+ 1.37

CATALOGUE

OF

MISCELLANEOUS STARS

OBSERVED WITH

THE TRANSIT CIRCLE.

1874.

CATALOGUE

OF

MISCELLANEOUS STARS

OBSERVED IN

THE YEAR 1874

WITH

THE TRANSIT CIRCLE.

[NOTE.—Stars designated simply by hour and number (*e. g.*, XXIII, 20) are from a list of zero-stars, selected by Professor Hall, to be used in a revision of the positions of the Washington Zones. Estimates of magnitudes are derived from observation.]

Number.	Name of Star.	Magnitude.	Mean Right Ascension, 1874.0.	Annual Precession.	Mean year.	No. of obs.	Mean N. P. Distance, 1874.0.	Annual Precession.	Mean year.	No. of obs.
			h. m. s.	s.			° ′ ″	″		
1	XXIII, 20	. .	0 0 43.51	+ 3.069	4.7	3	128 37 50.8	— 20.05	4.7	4
2	B. A. C. 7	2.0	2 27.90	3.096	4.8	3	31 32 42.6	20.05	4.8	3
3	O, 1	7.0	6 52.42	3.040	4.8	2	128 31 28.2	20.05	4.8	2
4	O, 2	. .	7 21.01	3.050	4.8	2	116 59 11.2	20.04	4.8	2
5	O, 9	8.0	27 46.83	2.975	4.8	2	121 0 59.8	19.91	4.8	2
6	O, 10.	7.0	0 29 50.68	+ 2.997	4.8	2	113 32 7.2	— 19.88	4.8	2
7	O, 11.	. .	30 52.41	2.987	4.8	1	115 27 39.4	19.87	4.8	1
8	O, 12.	. .	31 9.04	2.940	4.8	2	126 6 50.9	19.87	4.8	2
9	O, 13.	. .	31 53.31	2.972	4.8	3	118 18 53.1	19.86	4.8	3
10	B. A. C. 214 . . .	. .	40 34.34	3.153	4.8	2	71 6 37.0	19.74	4.8	2
11	B. A. C. 262 . . .	5.0	0 51 53.43	+ 6.955	4.8	3	4 25 11.3	— 19.54	4.8	3
12	I, 5	9.0	1 49 26.26	2.773	4.4	2	115 59 11.4	17.81	4.4	2
13	I, 6	. .	49 47.93	2.740	4.7	1	118 19 45.8	17.80	4.7	1
14	I, 7	8.0	50 51.34	2.721	4.9	2	119 29 19.8	17.75	4.9	2
15	I, 8	7.5	50 58.28	2.672	4.9	2	122 45 21.7	17.75	4.9	2
16	I, 10	. .	1 52 53.04	+ 2.651	4.8	2	123 40 49.2	— 17.67	4.8	2
17	I, 9^1	8.0	53 7.05	2.796	4.5	3	113 32 1.1	17.66	4.5	3
18	I, 9^2	. .	53 7.63	2.796	4.5	3	113 32 4.6	17.66	4.5	3
19	Anonymous . . .	. .	2 50 35.40	3.421	4.9	1	68 57 24.5	14.75	4.9	1
20	B. A. C. 960 . . .	5.0	3 2 51.19	12.938	4.6	3	5 32 27.2	14.00	4.6	3
21	III, 5.	. .	3 43 2.83	+ 2.642	4.0	1	111 17 24.9	— 11.28	4.0	1
22	B. A. C. 1247 . . .	. .	59 12.75	13.199	4.2	3	6 30 23.8	10.09	4.2	3
23	IV, 8.	. .	4 53 35.70	2.360	4.0	1	119 4 52.6	5.73	4.0	1
24	Anonymous . . .	9.4	5 57 15.71	3.531	4.1	3	71 4 2.7	0.24	4.1	3
25	Anonymous . . .	. .	57 46.44	3.505	4.1	1	72 4 6.5	0.19	4.1	1

Number.	Name of Star.	Magnitude.	Mean Right Ascension, 1874.0.	Annual Precession.	Mean year.	No. of obs.	Mean N. P. Distance, 1874.0.	Annual Precession.	Mean year.	No. of obs.
			h. m. s.	s.			° ′ ″	″		
26	Anonymous . . .	9.5	6 1 48.07	+ 3.526	4.1	3	71 14 44.7	+ 0.16	4.1	3
27	Anonymous . . .	9.4	2 13.05	3.525	4.1	3	71 17 52.5	0.19	4.1	3
28	Anonymous . . .	8.5	3 18.51	3.525	4.1	1	71 16 34.4	0.29	4.1	1
29	Anonymous . . .	. .	17 29.07	3.523	4.1	3	71 18 54.6	1.53	4.1	3
30	Anonymous . . .	9.2	18 10.07	3.523	4.1	3	71 17 34.8	1.59	4.1	3
31	Durch. 68°, 446, S. P. .	. .	6 24 59.57	+ 6.504	4.5	2	21 10 0.9	+ 2.18	4.5	1
32	Durch. 68°, 447, S. P. .	. .	27 55.35	6.486	4.5	2	21 14 36.2	2.44	4.5	2
33	VI, 3.	7.5	30 3.72	2.307	4.1	2	119 59 35.5	2.62	4.1	2
34	VI, 4.	7.2	31 13.90	2.346	4.1	3	118 43 58.9	2.72	4.1	3
35	VI, 7.	8.0	38 11.48	2.338	4.1	2	119 6 48.5	3.33	4.1	2
36	VI, 8	6.0	6 39 50.23	+ 2.395	4.1	2	117 13 22.9	+ 3.47	4.1	2
37	VI, 9	. .	52 40.55	2.398	4.0	1	117 22 13.2	4.57	4.0	1
38	Weisse (2) 1656 . .	. .	55 59.04	3.734	4.1	2	62 58 53.7	4.85	4.1	2
39	VII, 1	. .	7 3 16.99	2.440	4.1	1	116 11 40.9	5.47	4.1	1
40	B. A. C. 2326 . . .	. .	4 25.98	13.025	4.1	3	7 21 10.6	5.56	4.1	3
41	VII, 2	6.0	7 10 28.57	+ 2.323	4.1	3	120 28 3.1	+ 6.07	4.1	3
42	VII, 4	. .	13 53.38	2.310	4.1	2	120 59 47.5	6.35	4.1	2
43	VII, 6	. .	33 17.56	2.122	4.1	1	127 43 46.3	7.94	4.1	1
44	VII, 7	7.5	35 24.91	2.424	4.2	3	117 55 45.6	8.11	4.2	3
45	Anonymous . . .	. .	36 10.28	3.881	4.1	3	56 28 2.8	8.17	4.1	3
46	VII, 8	3.8	7 38 45.09	+ 2.409	4.2	2	118 39 16.3	+ 8.38	4.2	2
47	B. A. C. 2585 . . .	. .	46 27.60	15.293	4.1	3	5 35 8.9	8.98	4.1	3
48	Anonymous . . .	8.8	55 44.59	3.723	4.1	3	60 53 45.3	9.70	4.1	3
49	Anonymous . . .	9.0	8 0 31.18	3.712	4.1	4	61 2 23.4	10.07	4.1	3
50	VIII, 2	. .	13 0.00	2.269	4.1	1	125 40 39.2	11.00	4.1	1
51	Anonymous . . .	. .	8 14 42.72	+ 2.273	4.1	1	125 42 1.9	+ 11.12	4.1	1
52	Anonymous . . .	8.5	20 53.46	3.400	4.6	2	73 16 37.4	11.57	4.6	2
53	Anonymous . . .	. .	21 41.59	3.400	4.3	1	73 15 31.7	11.62	4.3	1
54	VIII, 5	. .	25 20.20	2.514	4.1	2	117 24 43.4	11.88	4.1	2
55	VIII, 6	. .	25 42.34	2.433	4.2	1	120 42 41.9	11.91	4.2	1
56	VIII, 8	9.0	8 30 42.85	+ 2.393	4.1	1	122 42 27.1	+ 12.26	4.1	1
57	Anonymous . . .	9.0	33 1.37	2.823	4.2	5	103 21 12.2	12.42	4.2	4
58	Anonymous . . .	9.5	33 25.02	2.823	4.2	3	103 21 18.2	12.44	4.2	3
59	VIII, 11	. .	39 20.51	2.442	4.1	1	121 33 58.6	12.85	4.1	1
60	Weisse (2) 67 . . .	8.0	9 5 26.15	3.974	4.2	3	45 39 19.6	14.51	4.2	3
61	Weisse (2) 137 . . .	8.0	9 8 49.32	+ 3.934	4.4	4	46 30 58.8	+ 14.72	4.4	4
62	Weisse (2) 334 . . .	8.0	17 39.08	3.808	4.2	3	49 46 4.0	15.23	4.2	3
63	Weisse (2) 363 . . .	8.0	18 48.38	3.839	4.2	4	48 25 52.2	15.30	4.2	4
64	IX, 2^1	. .	24 5.47	2.661	4.1	1	116 2 34.9	15.59	4.1	1
65	IX, 2^2	. .	24 19.03	2.662	4.1	1	116 2 20.4	15.60	4.1	1

Number.	Name of Star.	Magnitude.	Mean Right Ascension, 1874.0.	Annual Precession.	Mean year.	No. of obs.	Mean N.P. Distance, 1874.0.	Annual Precession.	Mean year.	No. of obs.
			h. m. s.	s.			° ′ ″	″		
66	Weisse (2) 503 . . .	7.0	9 25 30.39	+ 3.706	4.1	2	52 47 21 7	+ 15.67	4.1	2
67	Bonn VI, + 39°, 2260.	9.0	25 55.09	3.755	4.2	5	50 39 0.1	15.69	4.2	5
68	Armagh 2101 . . .	7.0	27 11.75	3.770	4.2	4	49 49 13.0	15.76	4.2	4
69	Durch. 37°, 2005 . .	9.0	27 21.59	3.706	4.2	3	52 28 49.0	15.77	4.2	3
70	Anonymous . . .	. .	27 41.82	3.703	4.2	2	52 33 32.4	15.79	4.2	2
71	Anonymous . . .	10.0	9 27 51.61	+ 3.703	4.2	4	52 33 35.3	+ 15.80	4.2	4
72	Weisse (2) 584 . . .	8.8	29 16.91	3.719	4.2	3	51 38 24.0	15.87	4.2	3
73	Weisse (2) 592 . . .	8.8	29 34.30	3.720	4.2	3	51 31 27.1	15.89	4.2	3
74	Anonymous . . .	9.2	36 30.08	3.606	4.1	3	55 42 27.4	16.25	4.1	3
75	IX, 4.	7.5	37 48.57	2.637	4.2	3	119 13 47.1	16.32	4.2	2
76	Anonymous . . .	9.0	9 38 38.32	+ 2.571	4.2	3	122 55 17.4	+ 16.36	4.2	3
77	IX, 6.	8.3	40 40.33	2.532	4.2	3	125 16 49.5	16.46	4.2	3
78	IX, 5.	8.3	40 50.93	2.578	4.2	3	122 55 40.2	16.47	4.2	3
79	Anonymous . . .	. .	41 5.22	2.432	4.2	1	130 3 12.4	16.48	4.2	1
80	IX, 8.	9.5	41 28.31	2.433	4.3	3	130 5 55.8	16.50	4.3	3
81	IX, 7.	7.5	9 41 31.32	+ 2.627	4.2	3	120 23 26.2	+ 16.50	4.2	3
82	Anonymous . . .	. .	41 58.55	2.578	4.3	1	123 6±. .	. .	. .	.
83	IX, 10	6.0	43 2.66	2.708	4.3	2	115 49 51.5	16.58	4.3	2
84	Bessel's Zones 354. .	7.2	43 20.74	3.541	4.1	3	58 1 13.7	16.59	4.1	3
85	IX, 11	8.2	44 29.61	2.654	4.2	3	119 18 56.0	16.65	4.2	3
86	IX, 12	8.0	9 44 51.68	+ 2.458	4.2	3	129 34 58.6	+ 16.67	4.2	3
87	IX, 13	. .	48 9.76	2.626	4.2	3	121 30 31.4	16.83	4.2	3
88	IX, 9	8.0	49 42.60	2.603	4.5	3	123 5 41.3	16.90	4.5	3
89	IX, 14	. .	50 28.92	2.746	4.2	1	114 28 59.4	16.94	4.2	1
90	Durch. 15°, 2147 . .	9.8	53 30.32	3.261	4.2	3	74 56 59.9	17.08	4.2	3
91	IX, 15	7.0	9 56 3.22	+ 2.544	4.2	2	127 29 34.2	+ 17.19	4.2	2
92	IX, 16	6.0	59 56.28	2.616	4.2	3	124 16 16.4	17.36	4.2	3
93	Weisse 5	8.0	10 2 50.47	3.190	4.3	3	79 47 25.5	17.49	4.3	3
94	Weisse (2) 28 . . .	8.2	3 37.54	3.303	4.2	3	70 28 30.4	17.52	4.2	3
95	Anonymous . . .	. .	5 3.07	3.301	4.2	1	70 26 21.3	17.58	4.2	1
96	X, 1	8.0	10 6 31.50	+ 2.534	4.2	2	130 15 15.9	+ 17.65	4.2	2
97	Weisse 83	8.8	6 52.43	3.186	4.3	3	79 51 30.1	17.66	4.3	3
98	X, 2	. .	10 19.84	2.745	4.2	2	117 59 22.6	17.80	4.2	2
99	Groombridge 1620. .	. .	10 58.73	9.919	5.0	1	5 6 36.5	17.83	5.0	1
100	Groombridge 1620, S. P.	. .	10 58.18	9.919	4.8	2	5 6 35.9	17.83	4.8	2
101	X, 3	. .	10 13 5.71	+ 2.633	4.3	3	126 10 30.4	+ 17.91	4.3	3
102	Weisse 208	8.7	13 36.69	3.194	4.2	3	78 29 59.4	17.93	4.2	3
103	X, 4	. .	14 38.11	2.591	4.3	3	129 4 14.5	17.97	4.3	3
104	Anonymous . . .	. .	14 50.78	3.174	4.2	3	80 17 2.4	17.98	4.2	3
105	Rumker 3155 . . .	. .	15 12.37	3.190	4.3	3	78 39 55.1	17.99	4.3	4

Number.	Name of Star.	Magnitude.	Mean Right Ascension, 1874.0.	Annual Precession.	Mean year.	No. of obs.	Mean N. P. Distance. 1874.0.	Annual Precession.	Mean year.	No. of obs.
			h. m. s.	s.			° ′ ″	″		
106	Anonymous . . .	10.0	10 16 16.86	+ 3.172	4.2	3	80 20 11.5	+ 18.04	4.2	3
107	Schjellerup 3615 . .	8.4	18 26.71	3.135	4.2	3	83 47 3.3	18.12	4.2	3
108	X, 5	. .	18 58.20	2.704	4.2	3	122 51 5.9	18.14	4.2	3
109	Anonymous . . .	9.0	19 2.92	3.153	4.3	3	81 53 20.0	18.14	4.3	4
110	Weisse 338	. .	20 48.09	3.118	4.2	3	85 18 50.4	18.20	4.2	3
111	X, 6	. .	10 21 23.35	+ 2.745	4.2	3	120 25 38.2	+ 18.23	4.2	3
112	Anonymous . . .	8.5	22 32.03	3.118	4.2	3	85 16 44.0	18.27	4.2	3
113	Bessel's Zones 64 .	8.0	22 59.09	3.116	4.2	3	85 27 29.8	18.28	4.2	4
114	Weisse 404	8.0	24 0.48	3.099	4.2	3	87 12 11.6	18.32	4.2	3
115	X, 7	8.0	24 57.17	2.811	4.3	3	115 50 19.8	18.35	4.3	3
116	X, 8	. .	10 27 57.06	+ 2.640	4.2	3	129 35 20.3	+ 18.46	4.2	3
117	X, 9	. .	28 54.78	2.735	4.3	3	123 6 52.9	18.49	4.3	4
118	Lamont 923 . . .	8.0	29 4.27	3.030	4.2	3	94 42 40.7	18.50	4.2	5
119	X, 10	. .	30 47.73	2.814	4.3	2	117 0 14.0	18.55	4.3	3
120	X, 11	. .	31 58.48	2.721	4.2	2	125 3 58.7	18.59	4.2	2
121	Weisse 560	9.5	10 32 21.34	+ 3.035	4.2	3	94 17 21.7	+ 18.61	4.2	3
122	Anonymous . . .	11.0	34 11.17	3.031	4.6	3	94 46 39.3	18.66	4.6	3
123	Bessel's Zones 222. .	. .	34 29.75	3.030	4.6	3	94 53 17.5	18.67	4.6	3
124	Anonymous . . .	11.0	35 36.19	3.018	4.2	1	96 25 47.4	18.71	4.2	1
125	Anonymous . . .	. .	36 11.12	3.019	4.2	1	96 23 31.0	18.73	4.2	1
126	X, 12	. .	10 36 17.36	+ 2.857	4.3	2	114 17 51.1	+ 18.73	4.3	2
127	Weisse 638	8.0	36 40.80	3.020	4.2	2	96 13 10.7	18.74	4.2	2
128	Anonymous . . .	. .	36 57.00	3.002	4.1	1	98 24 23.1	18.75	4.1	1
129	X, 13	8.0	37 22.77	2.836	4.8	3	116 38 19.3	18.77	4.6	4
130	X, 14	6.0	38 25.90	2.871	4.6	2	113 19 30.6	18.80	4.6	2
131	X, 15	. .	10 41 10.88	+ 2.768	4.2	2	123 59 37.4	+ 18.88	4.2	1
132	Anonymous . . .	8.5	44 41.67	2.963	4.2	3	104 13 30.4	18.98	4.2	3
133	X, 16	. .	46 40.60	2.868	4.2	1	115 54 39.4	19.03	4.2	1
134	X, 17	7.0	48 7.18	2.775	4.2	3	125 47 13.3	19.08	4.2	3
135	X, 18	8.0	57 15.92	2.853	4.2	2	121 16 56.2	19.31	4.2	2
136	XI, 1.	8.0	11 3 56.15	+ 2.922	4.2	1	114 55 26.5	+ 19.46	4.2	1
137	XI, 2.	. .	11 34.60	2.883	4.2	2	124 2 57.8	19.61	4.2	2
138	XI, 3.	9.4	12 32.04	2.893	4.3	3	123 3 53.7	19.63	4.3	3
139	XI, 4.	8.0	16 53.92	2.938	4.3	3	118 12 23.2	19.70	4.3	3
140	Anonymous . . .	. .	21 28.29	3.086	5.0	2	86 28 32.8	19.77	5.0	2
141	XI, 5.	. .	11 22 18.46	+ 2.940	4.2	2	121 9 49.3	+ 19.78	4.2	2
142	XI, 6.	7.0	26 42.09	2.934	4.3	2	125 30 46.4	19.84	4.3	2
143	XI, 7.	. .	28 6.92	2.914	4.3	2	130 27 30.6	19.86	4.3	2
144	XI, 8.	. .	30 27.79	2.997	4.2	2	113 44 28.0	19.89	4.2	2
145	XI, 9.	. .	33 58.77	2.992	4.3	3	117 47 53.6	19.93	4.3	3

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			h. m. s.	s.			° ′ ″	″		
146	XI, 10	6.0	11 37 10.76	+ 2.974	4.2	2	126 29 26.3	+ 19.95	4.2	2
147	XI, 11	8.0	40 41.58	3.008	4.2	3	119 48 5.5	19.98	4.2	3
148	XI, 12	6.0	42 23.49	3.022	4.3	3	116 2 59.0	20.00	4.3	3
149	XI, 13	8.0	43 22.78	3.012	4.4	3	121 44 42.0	20.00	4.4	3
150	XI, 14	7.0	46 26.32	3.011	4.5	3	127 38 20.5	20.02	4.5	3
151	XI, 15	. .	11 48 50.28	+ 3.039	4.3	1	117 2 7.6	+ 20.03	4.3	1
152	XI, 16	8.5	50 39.79	3.037	4.2	1	122 36 52.5	20.04	4.2	1
153	XIII, 3	. .	13 5 48.18	3.301	4.4	1	121 11 35.0	19.23	4.4	1
154	XIII, 4	. .	6 40.37	3.343	4.3	2	125 16 32.4	19.21	4.3	2
155	XIII, 5	. .	7 39.44	3.278	4.4	3	117 52 2.1	19.19	4.4	3
156	XIII, 6	. .	13 9 55.18	+ 3.303	4.4	1	119 55 34.9	+ 19.13	4.4	1
157	XIII, 7	7.0	14 35.08	3.363	4.4	2	124 14 7.0	19.00	4.4	2
158	XIII, 8	. .	15 34.34	3.276	4.4	2	115 10 51.1	18.97	4.4	2
159	XIII, 9	. .	17 41.82	3.368	4.4	2	123 37 54.9	18.91	4.4	2
160	XIII, 11.	. .	23 7.59	3.420	4.4	1	126 15 51.6	18.75	4.4	1
161	B. A. C. 4526 . . .	. .	13 26 50.04	+ 2.842	4.4	2	64 59 53.7	+ 18.63	4.4	3
162	XIII, 13.	. .	27 8.78	3.463	4.4	2	128 14 46.8	18.62	4.4	2
163	XIII, 14.	. .	27 48.08	3.448	4.4	3	126 54 32.0	18.60	4.4	3
164	XIII, 15.	. .	28 37.79	3.384	4.4	2	121 43 38.4	18.57	4.4	2
165	B. A. C. 4540 . . .	. .	29 16.60	2.320	4.4	1	34 0 16.8	18.55	4.4	1
166	XIII, 16.	. .	13 29 53.59	+ 3.505	4.4	3	130 15 13.6	+ 18.53	4.4	3
167	XIII, 18.	. .	30 5.01	3.333	4.4	2	117 0 22.1	18.52	4.4	2
168	XIII, 19.	. .	31 18.94	3.293	4.4	2	113 2 57.7	18.48	4.4	2
169	XIII, 21.	8.0	31 39.50	3.404	4.4	2	122 28 7.2	18.47	4.4	2
170	B. A. C. 4568 . . .	. .	35 57.40	2.287	4.2	1	34 40 48.0	18.32	4.2	1
171	B. A. C. 4594 . . .	. .	13 40 52.32	+ 2.790	4.4	1	63 39 52.7	+ 18.14	4.4	1
172	B. A. C. 4605 . . .	. .	41 53.56	+ 2.249	4.3	2	34 56 13.2	18.10	4.3	2
173	B. A. C. 4643 . . .	6.0	46 1.65	− 2.072	4.4	5	6 36 56.6	17.95	4.4	4
174	B. A. C. 4640 . . .	. .	47 27.35	+ 2.734	4.4	1	60 43 52.2	17.89	4.4	1
175	B. A. C. 4684 . . .	. .	58 18.36	2.240	4.4	1	38 25 17.4	17.44	4.4	1
176	B. A. C. 4723 . . .	. .	14 8 18.46	+ 2.667	4.4	2	60 18 16.2	+ 16.99	4.4	2
177	B. A. C. 4728 . . .	. .	9 18.76	2.426	4.3	2	47 53 19.5	16.95	4.3	2
178	Anonymous . . .	. .	11 42.25	2.144	4.4	3	38 3 1.9	16.83	4.4	3
179	B. A. C. 4752 . . .	. .	12 52.52	2.138	4.4	3	38 6 34.3	16.78	4.4	3
180	Groombridge 2097. .	. .	13 44.91	2.468	4.4	1	50 39 8.5	16.74	4.4	1
181	XIV, 11	. .	14 19 1.56	+ 3.696	4.4	1	129 18 15.0	+ 16.48	4.4	1
182	XIV, 12	. .	20 41.85	3.674	4.4	1	127 59 27.3	16.39	4.4	1
183	B. A. C. 4804 . . .	. .	24 14.80	2.121	4.3	2	39 35 24.6	16.21	4.3	2
184	B. A. C. 4808 . . .	. .	26 23.95	2.595	4.4	1	59 4 26.9	16.10	4.4	1
185	B. A. C. 4825 . . .	. .	29 29.37	2.457	4.4	2	52 49 11.1	15.94	4.4	2

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			h. m. s.	s.			° ′ ″	″		
186	B. A. C. 4831 . . .	. .	14 33 28.48	+ 2.266	4.4	1	45 48 48.6	+ 15.72	4.4	1
187	B. A. C. 4847[1] . . .	. .	34 48.30	2.817	4.3	3	73 2 25.4	15.65	4.4	2
188	B. A. C. 4847[2] . . .	. .	34 48.81	2.817	4.3	3	73 2 25.9	15.65	4.4	2
189	B. A. C. 4863 . . .	. .	37 33.63	2.426	4.4	3	52 42 20.2	15.50	4.4	3
190	B. A. C. 4874 . . .	. .	38 54.96	1.478	4.4	3	28 12 1.6	15.42	4.4	3
191	B. A. C. 4885 . . .	. .	14 40 44.48	+ 2.270	4.4	2	47 5 17.2	+ 15.32	4.4	2
192	XIV, 22	7.0	42 14.48	3.724	4.4	1	126 52 9.9	15.24	4.4	1
193	B. A. C. 4897 . . .	. .	44 9.96	2.378	4.4	3	51 40 7.0	15.13	4.4	3
194	B. A. C. 4905 . . .	. .	45 34.80	2.757	4.4	3	70 22 30.1	15.04	4.4	4
195	XIV, 24.	. .	48 1.14	3.661	4.4	1	123 20 31.5	14.90	4.4	1
196	B. A. C. 4918 . . .	. .	14 48 14.94	+ 1.533	4.4	2	30 11 38.0	+ 14.89	4.4	2
197	XIV, 25	. .	49 11.35	3.426	4.4	1	111 28 26.9	14.83	4.4	1
198	XIV, 26	. .	49 33.98	3.507	4.4	1	115 46 21.7	14.81	4.4	1
199	XIV, 27	. .	49 42.90	3.565	4.4	2	118 38 46.8	14.80	4.4	2
200	B. A. C. 4942 . . .	. .	54 36.06	2.294	4.4	2	49 51 15.2	14.51	4.4	2
201	B. A. C. 4952 . . .	. .	14 56 20.76	+ 2.047	4.4	1	42 13 26.5	+ 14.40	4.4	1
202	B. A. C. 4980 . . .	. .	15 1 15.45	1.993	4.4	4	41 21 39.9	14.10	4.4	4
203	XV, 2	7.0	1 27.39	3.626	4.4	1	120 12 . .	. .	. .	.
204	XV, 3	. .	2 30.45	3.488	4.4	1	113 30 9.5	14.02	4.4	1
205	B. A. C. 5000 . . .	. .	5 32.71	2.430	4.4	3	56 26 35.1	13.83	4.4	3
206	B. A. C. 5001 . . .	. .	15 5 35.93	+ 2.520	4.4	3	60 17 31.1	+ 13.83	4.4	3
207	XV, 4	7.0	10 58.21	3.661	4.4	3	120 44 44.9	13.49	4.4	3
208	XV, 5	. .	11 30.42	3.730	4.4	2	123 34 12.4	13.45	4.4	2
209	XV, 6	7.0	12 56.52	3.599	4.4	2	117 49 38.1	13.36	4.4	2
210	XV, 7	. .	13 23.04	3.846	4.4	1	127 45 38.8	13.33	4.4	1
211	B. A. C. 5071 . . .	. .	15 16 22.96	+ 1.759	4.4	2	37 35 12.1	+ 13.13	4.4	2
212	B. A. C. 5072 . . .	. .	16 45.87	2.405	4.4	3	56 36 51.5	13.11	4.4	3
213	B. A. C. 5075 . . .	. .	17 59.95	2.468	4.5	3	59 15 23.3	13.02	4.5	3
214	XV, 9	7.0	18 48.16	3.462	4.4	4	110 56 7.2	12.97	4.4	4
215	XV, 10	6.0	19 14.45	3.823	4.5	2	126 19 23.7	12.94	4.5	2
216	B. A. C. 5091 . . .	. .	15 20 32.52	+ 0.987	4.4	3	26 12 29.8	+ 12.85	4.4	3
217	B. A. C. 5098 . . .	. .	22 38.05	2.486	4.4	3	60 27 31.0	12.71	4.4	3
218	XV, 11	. .	23 2.66	3.803	4.4	2	125 12 16.6	12.69	4.4	2
219	XV, 12	. .	24 5.61	3.624	4.5	1	117 58 . .	. .	. .	.
220	B. A. C. 5113 . . .	. .	25 22.79	1.907	4.5	2	41 51 11.2	12.53	4.5	3
221	B. A. C. 5116 . . .	. .	15 25 26.78	+ 1.048	4.5	3	27 17 16.4	+ 12.52	4.5	3
222	XV, 13	. .	25 36.87	3.568	4.4	1	115 22 13.0	12.51	4.4	1
223	XV, 14	. .	26 5.24	3.918	4.4	2	128 55 16.6	12.48	4.4	2
224	XV, 15	. .	28 17.36	3.748	4.4	1	122 40 12.7	12.33	4.4	1
225	XV, 16	. .	29 42.89	3.613	4.4	3	117 3 15.2	12.23	4.4	3

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			h. m. s.	s.			° ′ ″	″		
226	B. A. C. 5146 . . .	. .	15 29 50.21	+ 2.726	4.4	3	71 55 24.4	+ 12.22	4.4	3
227	B. A. C. 5157 . . .	. .	30 50.87	2.060	4.5	2	46 24 50.6	12.15	4.5	2
228	XV, 17	7.5	31 58.36	3.622	4.5	4	117 13 49.8	12.07	4.5	4
229	XV, 18	7.0	32 45.75	3.957	4.5	3	129 34 17.4	12.02	4.5	3
230	XV, 21	. .	33 23.18	3.488	4.5	2	111 11 41.0	11.97	4.5	2
231	XV, 19	. .	15 33 53.12	+ 3.729	4.4	3	121 26 19.5	+ 11.94	4.4	3
232	XV, 20	. .	34 8.36	3.686	4.5	2	119 44 19.1	11.92	4.5	2
233	B. A. C. 5178[1] . . .	. .	34 37.50	2.260	4.4	4	52 57 10.8	11.88	4.4	4
234	B. A. C. 5178[2] . . .	. .	34 38.04	2.260	4.4	3	52 57 15.0	11.88	4.4	3
235	XV, 22	6.5	38 32.82	3.644	4.4	2	117 39 50.8	11.61	4.4	2
236	XV, 23	. .	15 40 2.35	+ 3.472	4.4	3	110 4 19.5	+ 11.50	4.4	3
237	XV, 24	. .	40 58.62	3.549	4.4	2	113 26 33.4	11.43	4.4	2
238	B. A. C. 5234 . . .	. .	43 4.16	2.702	4.4	2	71 28 5.2	11.28	4.4	2
239	B. A. C. 5249 . . .	. .	44 45.04	0.893	4.4	3	27 0 37.1	11.16	4.4	3
240	B. A. C. 5252 . . .	. .	45 43.92	2.637	4.4	3	68 38 30.9	11.09	4.4	3
241	B. A. C. 5259 . . .	6.0	15 46 29.09	+ 2.260	4.4	3	53 57 2.4	+ 11.03	4.4	3
242	B. A. C. 5271 . . .	. .	48 19.22	2.033	4.4	2	47 11 40.4	10.90	4.4	3
243	XV, 25	. .	49 28.62	3.712	4.4	1	119 37 32.8	10.81	4.4	1
244	Anonymous . . .	10.0	51 10.23	3.716	4.4	1	119 37 17.6	10.69	4.4	1
245	Anonymous . . .	9.0	51 23.99	3.716	4.4	1	119 36 49.9	10.67	4.4	1
246	B. A. C. 5307 . . .	. .	15 53 23.12	+ 1.157	4.4	2	30 43 28.1	+ 10.52	4.4	2
247	XV, 27	7.0	53 24.08	3.644	4.4	3	116 41 17.2	10.52	4.4	3
248	B. A. C. 5319 . . .	. .	56 13.63	2.308	4.4	2	56 18 55.2	10.31	4.4	2
249	B. A. C. 5322 . . .	. .	56 52.16	2.581	4.5	3	66 50 40.3	10.26	4.5	3
250	B. A. C. 5348 . . .	. .	59 31.72	1.155	4.4	1	31 5 51.1	10.06	4.4	1
251	XVI, 1	. .	16 0 26.98	+ 3.637	4.4	1	115 59 13.2	+ 9.99	4.4	1
252	B. A. C. 5385 . . .	6.0	4 21.86	2.196	4.4	3	53 11 15.6	9.69	4.4	3
253	B. A. C. 5388 . . .	. .	4 48.04	1.890	4.4	3	44 44 1.4	9.66	4.4	3
254	XVI, 2	7.0	6 16.15	3.535	4.4	3	111 4 34.3	9.55	4.4	3
255	B. A. C. 5400 . . .	. .	6 19.31	1.930	4.5	2	45 50 37.3	9.54	4.5	2
256	B. A. C. 5426 . . .	. .	16 9 53.63	+ 2.661	4.4	4	70 52 20.7	+ 9.27	4.4	4
257	B. A. C. 5432[1] . . .	. .	9 57.53	2.267	4.5	1	55 49 19.7	9.26	4.5	1
258	B. A. C. 5432[2] . . .	. .	9 57.59	2.267	4.5	2	55 49 15.2	9.26	4.5	2
259	XVI, 3	7.0	10 29.20	3.696	4.5	2	117 43 44.5	9.22	4.5	2
260	XVI, 4	6.0	13 3.44	3.600	4.5	3	113 51 48.4	9.02	4.5	3
261	XVI, 5	. .	16 13 59.76	+ 4.073	4.5	4	129 54 37.2	+ 8.95	4.5	3
262	B. A. C. 5459 . . .	. .	15 9.18	0.990	4.4	2	29 56 19.7	8.86	4.4	2
263	B. A. C. 5479 . . .	. .	17 36.88	2.256	4.5	3	55 54 12.1	8.66	4.5	3
264	B. A. C. 5480 . . .	. .	17 44.42	2.259	4.5	3	56 0 8.4	8.65	4.5	3
265	XVI, 6	7.5	19 36.92	3.743	4.5	3	119 0 4.7	8.51	4.5	3

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			h. m. s.	s.			° ′ ″	″		
266	XVI, 7	8.0	16 19 46.32	+ 3.557	4.6	1	111 49 46.4	+ 8.49	4.6	1
267	B. A. C. 5417 . . .	. .	20 53.53	1.859	4.5	3	45 1 17.1	8.40	4.5	3
268	XVI, 8	9.0	21 43.13	3.763	4.5	2	119 35 11.2	8.34	4.5	2
269	XVI, 9	. .	22 49.00	3.690	4.5	2	116 53 54.9	8.25	4.5	2
270	XVI, 10	. .	24 40.22	3.546	4.5	2	111 11 41.9	8.10	4.5	2
271	XVI, 11	. .	16 25 34.34	+ 3.939	4.4	2	125 16 23.8	+ 8.03	4.4	2
272	B. A. C. 5532 . . .	. .	26 42.58	2.817	4.4	2	78 14 22.9	7.94	4.4	2
273	B. A. C. 5541 . . .	. .	28 34.64	2.339	4.5	2	59 14 7.1	7.79	4.5	2
274	B. A. C. 5549 . . .	. .	29 37.66	1.580	4.5	2	39 35 32.4	7.70	4.5	2
275	XVI, 12	. .	29 56.70	4.068	4.4	2	128 53 43.2	7.68	4.4	2
276	B. A. C. 5560 . . .	. .	16 30 39.05	+ 0.833	4.5	4	28 54 43.2	+ 7.62	4.5	4
277	XVI, 13	. .	31 21.75	3.793	4.5	3	120 12 42.7	7.56	4.5	3
278	B. A. C. 5568 . . .	. .	32 30.97	1.748	4.6	2	43 7 48.6	7.47	4.6	2
279	B. A. C. 5587 . . .	. .	34 59.40	2.793	4.6	1	77 21 31.1	7.27	4.6	1
280	XVI, 14	. .	35 16.90	4.043	4.5	2	127 54 49.4	7.25	4.5	2
281	XVI, 16	. .	16 35 18.25	+ 3.686	4.4	1	116 12 55.0	+ 7.24	4.4	1
282	B. A. C. 5596 . . .	. .	35 19.82	1.629	4.6	2	40 49 27.0	7.24	4.6	2
283	XVI, 15	. .	36 6.86	3.589	4.5	2	112 29 43.1	7.18	4.5	2
284	B. A. C. 5604 . . .	. .	36 32.09	2.297	4.6	1	58 10 2.6	7.14	4.6	1
285	XVI, 17	. .	37 7.48	3.745	4.5	1	118 16 21.8	7.09	4.5	1
286	XVI, 18	. .	16 37 22.10	+ 3.904	4.4	2	123 36 43.7	+ 7.07	4.4	2
287	XVI, 19	. .	39 31.78	3.526	4.5	2	109 52 4.2	6.90	4.5	2
288	B. A. C. 5620 . . .	. .	39 40.26	2.713	4.6	2	74 1 13.0	6.89	4.6	2
289	B. A. C. 5628 . . .	. .	40 3.00	0.399	4.6	1	25 10 16.2	6.85	4.6	1
290	XVI, 20	. .	40 21.51	3.827	4.5	1	120 58 32.9	6.83	4.5	1
291	B. A. C. 5629 . . .	. .	16 40 24.35	+ 1.214	4.6	1	34 4 39.6	+ 6.83	4.6	1
292	XVI, 21	6.0	40 34.56	3.640	4.5	2	114 17 56.7	6.81	4.5	2
293	B. A. C. 5647 . . .	. .	43 45.70	2.769	4.4	1	76 31 1.2	6.55	4.4	1
294	B. A. C. 5658 . . .	. .	44 16.49	1.223	4.5	2	34 21 58.1	6.51	4.5	2
295	B. A. C. 5677 . . .	. .	46 31.80	2.484	4.5	2	65 7 48.8	6.32	4.5	2
296	B. A. C. 5693 . . .	. .	16 48 11.42	+ 2.280	4.5	1	58 5 17.3	+ 6.18	4.5	1
297	XVI, 23	. .	49 12.24	3.611	4.5	2	112 56 51.7	6.10	4.5	2
298	B. A. C. 5706 . . .	. .	50 42.07	1.716	4.5	1	43 15 21.9	5.97	4.5	1
299	B. A. C. 5717 . . .	. .	52 19.30	0.805	4.6	2	29 26 6.6	5.84	4.6	2
300	B. A. C. 5714 . . .	. .	52 20.69	2.461	4.6	2	64 27 4.4	5.83	4.6	2
301	XVI, 24	. .	16 54 26.13	+ 4.027	4.5	1	126 40 35.0	+ 5.66	4.5	1
302	B. A. C. 5740 . . .	. .	55 20.38	0.277	4.6	3	24 40 21.2	5.58	4.6	3
303	B. A. C. 5745 . . .	. .	55 48.35	0.288	4.6	3	24 46 8.3	5.54	4.6	3
304	B. A. C. 5752 . . .	. .	57 3.03	1.100	4.6	1	33 7 33.5	5.44	4.6	1
305	B. A. C. 5753 . . .	. .	57 51.71	2.756	4.6	3	76 12 50.6	5.37	4.6	2

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			h. m. s.	s.			° ′ ″	″		
306	B. A. C. 5757 . . .	. .	16 58 10.06	+ 2.757	4.6	3	76 14 58.0	+ 5.35	4.6	2
307	B. A. C. 5776 . . .	. .	17 1 29.30	1.585	4.5	3	41 1 16.3	5.06	4.5	3
308	B. A. C. 5785[1] . . .	. .	2 43.59	1.247	4.4	1	35 21 49.6	4.96	4.4	1
309	B. A. C. 5785[2] . . .	. .	2 43.64	1.247	4.4	1	35 21 50.9	4.96	4.4	1
310	B. A. C. 5798 . . .	. .	5 50.18	2.483	4.5	3	65 36 24.3	4.70	4.5	3
311	Anonymous . . .	. .	17 6 4.06	+ 2.482	4.6	2	65 35 33.8	+ 4.68	4.6	2
312	XVII, 1	. .	13 17.06	3.873	4.5	3	121 27 2.8	4.06	4.5	3
313	B. A. C. 5847 . . .	. .	13 19.58	2.070	4.6	1	52 34 30.8	4.06	4.6	1
314	XVII, 2	. .	13 27.26	3.574	4.6	1	110 58 31.0	4.05	4.6	1
315	B. A. C. 5863 . . .	. .	15 56.71	2.060	4.6	2	57 22 8.4	3.83	4.6	2
316	XVII, 3	. .	17 16 3.88	+ 3.592	4.4	1	111 35 31.1	+ 3.82	4.4	1
317	XVII, 4	. .	16 40.84	3.977	4.6	2	124 34 34.8	3.77	4.6	2
318	XVII, 5	. .	18 12.00	3.756	4.5	2	117 28 56.3	3.64	4.4	1
319	B. A. C. 5886[1] . . .	7.0	19 19.78	2.071	4.5	2	52 44 9.3	3.54	4.5	2
320	B. A. C. 5886[2] . . .	5.5	19 20.18	2.071	4.6	3	52 44 12.7	3.54	4.6	3
321	B. A. C. 5900 . . .	. .	17 21 22.94	+ 2.588	4.5	2	69 48 36.4	+ 3.36	4.5	2
322	XVII, 6	3.0	22 11.85	4.073	4.5	3	127 11 34.3	3.29	4.5	3
323	XVII, 7	. .	23 29.20	3.949	4.5	1	123 36 13.4	3.18	4.5	1
324	XVII, 8	6.5	23 43.78	3.656	4.5	1	113 51 45.8	3.16	4.5	1
325	XVII, 9	8.0	23 57.73	3.880	4.5	2	121 27 5.8	3.14	4.5	2
326	B. A. C. 5918 . . .	. .	17 24 11.69	+ 0.895	4.4	1	31 14 31.2	+ 3.12	4.4	1
327	B. A. C. 5929 . . .	. .	26 27.77	2.002	4.6	2	51 1 20.4	2.92	4.6	2
328	B. A. C. 5939 . . .	. .	28 33.95	2.760	4.5	2	76 45 3.0	2.74	4.5	2
329	B. A. C. 5950 . . .	. .	29 41.26	1.160	4.5	1	34 43 44.2	2.65	4.5	1
330	XVII, 10	. .	29 43.77	3.863	4.5	2	120 49 42.8	2.64	4.6	1
331	B. A. C. 5951 . . .	. .	17 29 46.89	+ 1.161	4.5	1	34 44 26.1	+ 2.64	4.5	1
332	XVII, 11	. .	32 24.15	3.803	4.4	1	118 51 3.3	2.41	4.4	1
333	XVII, 12	. .	35 3.87	3.557	4.5	2	110 2 22.6	2.18	4.5	2
334	XVII, 13	. .	35 52.82	3.599	4.5	1	111 37 10.1	2.11	4.5	1
335	B. A. C. 5990 . . .	. .	35 54.60	1.692	4.6	1	43 55 33.8	2.10	4.6	1
336	B. A. C. 5988 . . .	. .	17 35 54.93	+ 2.464	4.5	1	65 25 21.3	+ 2.10	4.5	1
337	XVII, 14	. .	38 0.64	4.202	4.5	2	130 20 13.3	1.92	4.5	2
338	XVII, 15	. .	40 2.24	3.924	4.6	1	122 37 15.7	1.74	4.6	1
339	XVII, 18	. .	40 41.58	4.149	4.5	2	128 56 17.3	1.69	4.5	2
340	B. A. C. 6033 . . .	. .	43 42.74	2.431	4.5	1	64 20 1.1	1.42	4.5	1
341	B. A. C. 6036* . . .	. .	17 43 45.23	+ 1.611	4.6	1	42 23 10.3	+ 1.42	4.6	1
342	XVII, 21	6.0	44 28.18	3.975	4.5	2	124 4 47.1	1.36	4.5	2
343	XVII, 20	. .	44 29.74	4.027	4.5	2	125 35 17.9	1.36	4.5	2
344	B. A. C. 6052 . . .	. .	46 3.78	1.435	4.5	2	39 11 17.0	1.22	4.5	2

*This star is probably recorded ten revolutions wrong, which would make the Mean N. P. D.= 42° 20′ 37.″2.

Number.	Name of Star.	Magnitude.	Mean Right Ascension, 1874.0.	Annual Precession.	Mean year.	No. of obs.	Mean N. P. Distance, 1874.0.	Annual Precession.	Mean year.	No. of obs.
			h. m. s.	s.			° ′ ″	″		
345	B. A. C. 6056 . . .	. .	17 46 45.60	+ 1.567	4.6	2	41 34 14.6	+ 1.16	4.6	2
346	B. A. C. 6073 . . .	. .	50 20.20	2.419	4.4	1	63 55 40.4	0.85	4.4	1
347	B. A. C. 6087 . . .	. .	53 40.98	2.294	4.4	1	59 47 55.0	0.55	4.4	1
348	Anonymous . . .	7.5	55 16.35	1.713	4.5	5	44 30 56.8	0.41	4.5	4
349	B. A. C. 6109 . . .	. .	56 20.39	1.712	4.5	4	44 29 30.4	0.32	4.5	3
350	B. A. C. 6129 . . .	. .	17 59 51.48	+ 1.563	4.5	2	41 32 26.5	+ 0.01	4.5	2
351	B. A. C. 6134 . . .	. .	18 0 43.44	2.526	4.6	2	67 47 28.6	− 0.06	4.6	3
352	B. A. C. 6147 . . .	. .	2 14.60	2.283	4.6	2	59 27 16.8	0.20	4.6	2
353	B. A. C. 6162 . . .	. .	3 41.17	1.806	4.5	1	46 33 11.3	0.32	4.5	1
354	XVIII, 1	. .	3 57.81	3.811	4.6	1	118 55 33.1	0.35	4.6	1
355	XVIII, 2	8.5	18 4 41.44	+ 3.874	4.6	2	120 58 29.1	− 0.41	4.6	2
356	B. A. C. 6178 . . .	. .	7 9.67	2.257	4.6	1	58 37 28.4	0.63	4.6	1
357	XVIII, 6	. .	9 24.82	3.803	4.6	1	118 41 31.9	0.82	4.6	1
358	XVIII, 7	. .	10 4.27	4.088	4.5	1	127 16 4.2	0.88	4.5	1
359	XVIII, 8	. .	11 37.62	4.205	4.7	1	130 19 18.0	1.02	4.7	1
360	B. A. C. 6203 . . .	. .	18 11 43.86	+ 1.865	4.6	1	47 52 58.2	− 1.03	4.6	1
361	XVIII, 10	. .	15 31.55	3.768	4.7	1	117 33 46.5	1.36	4.7	1
362	B. A. C. 6251 . . .	. .	18 19.70	2.542	4.5	1	68 17 10.3	1.60	4.5	1
363	B. A. C. 6289 . . .	. .	22 4.58	0.881	4.6	1	31 16 17.6	1.93	4.6	1
364	XVIII, 13	. .	25 25.62	4.054	4.5	3	126 28 14.5	2.22	4.5	3
365	XVIII, 14	. .	18 28 58.92	+ 3.730	4.5	2	116 23 18.1	− 2.53	4.5	2
366	B. A. C. 6335 . . .	. .	29 18.34	1.374	4.6	2	37 58 43.1	2.56	4.6	2
367	XVIII, 17	. .	33 52.09	3.692	4.5	1	115 6 11.6	2.95	4.5	1
368	B. A. C. 6365 . . .	. .	35 55.73	2.031	4.5	1	51 44 55.9	3.13	4.5	1
369	XVIII, 23	6.0	46 . .	. .	. .	.	111 30 42.7	4.04	4.7	1
370	XVIII, 24	. .	18 48 8.44	+ 3.816	4.5	1	119 38 7.9	− 4.18	4.5	1
371	B. A. C. 6473 . . .	. .	50 50.10	1.921	4.6	2	48 33 28.6	4.41	4.6	2
372	B. A. C. 6475 . . .	. .	51 30.11	1.823	4.6	2	46 13 7.3	4.47	4.6	2
373	B. A. C. 6491 . . .	. .	54 13.84	2.244	4.5	2	57 28 56.0	4.70	4.5	2
374	B. A. C. 6542 . . .	. .	19 1 23.22	2.497	4.6	4	65 56 34.9	5.31	4.6	4
375	B. A. C. 6551 . . .	. .	19 2 5.39	+ 1.350	4.7	3	36 47 45.3	− 5.37	4.7	4
376	B. A. C. 6566 . . .	. .	5 20.29	1.534	4.5	1	39 50 18.8	5.64	4.5	1
377	B. A. C. 6574 . . .	. .	7 12.39	2.572	4.5	1	68 39 22.1	5.80	4.5	1
378	B. A. C. 6579[1] . . .	. .	8 49.27	1.570	4.5	2	40 22 48.1	5.93	4.5	2
379	B. A. C. 6579[2] . . .	. .	8 50.03	1.570	4.5	2	40 22 41.6	5.93	4.5	2
380	B. A. C. 6581 . . .	. .	19 9 28.15	+ 2.042	4.5	1	51 4 13.0	− 5.99	4.5	1
381	XIX, 1	7.0	10 9.58	3.912	4.7	2	123 22 32.5	6.04	4.7	2
382	XIX, 2	6.0	10 15.75	3.515	4.7	3	109 10 28.9	6.05	4.7	3
383	B. A. C. 6589 . . .	6.0	10 48.08	2.579	4.7	2	68 49 51.2	6.10	4.7	2
384	XIX, 3	7.5	11 30.85	3.785	4.7	2	119 14 52.7	6.16	4.7	2

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			h. m. s.	s.			° ′ ″	″		
385	XIX, 4	. .	19 11 40.37	+ 3.633	4.7	1	113 47 6.4	— 6.17	4.7	1
386	B. A. C. 6599 . . .	. .	11 59.75	2.082	4.7	1	52 5 21.4	6.20	4.7	1
387	XIX, 5	. .	13 14.56	3.685	4.5	1	115 45 49.5	6.30	4.5	1
388	B. A. C. 6623 . . .	5.0	14 11.38	1.382	4.6	2	36 51 47.9	6.38	4.6	2
389	B. A. C. 6635 . . .	. .	16 49.34	1.325	4.3	1	35 51 28.2	6.60	4.3	1
390	B. A. C. 6642 . . .	. .	19 18 42.56	+ 2.695	4.6	2	73 18 23.3	— 6.75	4.6	2
391	B. A. C. 6654 . . .	6.0	19 56.90	2.626	4.7	2	70 26 48.4	6.85	4.7	2
392	B. A. C. 5659 . . .	6.0	20 5.63	1.574	4.8	1	39 58 25.5	6.87	4.8	1
393	O. Arg. N. 19238 . .	6.0	21 14.68	1.578	4.8	1	40 0 22.7	6.96	4.8	1
394	B. A. C. 6674 . . .	. .	23 27.83	2.505	4.6	2	65 35 19.5	7.14	4.6	2
395	B. A. C. 6676 . . .	. .	19 23 41.50	+ 2.503	4.6	2	65 29 22.4	— 7.16	4.6	3
396	B. A. C. 6687 . . .	. .	24 20.91	1.472	4.6	3	37 56 7.5	7.22	4.6	3
397	B. A C. 6698 . . .	5.0	27 5.47	2.229	4.3	1	55 48 51.0	7.44	4.5	2
398	B. A. C. 6712 . . .	. .	29 2.43	1.066	4.7	2	31 40 8.6	7.60	4.7	2
399	B. A. C. 6714 . . .	7.0	29 50.65	2.382	4.7	3	60 48 46.8	7.66	4.7	3
400	B. A. C. 6717 . . .	6.0	19 30 13.54	+ 1.652	4.7	3	41 0 39.9	— 7.69	4.7	3
401	B. A. C. 6718 . . .	. .	30 34.81	1.956	4.6	1	47 51 45.6	7.72	4.6	1
402	B. A. C. 6721 . . .	6.0	31 5.07	1.708	4.7	1	42 6 33.3	7.76	4.8	2
403	Anonymous . . .	. .	32 9.06	3.864	4.8	1	122 45 45.6	7.85	4.8	1
404	B. A. C. 6730 . . .	. .	32 33.30	1.609	4.7	2	40 2 38.5	7.88	4.7	2
405	B. A. C. 6731 . . .	. .	19 32 43.87	+ 1.868	4.8	1	45 34 57.8	— 7.89	4.8	2
406	B. A. C. 6734 . . .	. .	33 3.83	1.612	4.7	3	40 4 10.8	7.92	4.7	3
407	B. A. C. 6763 . . .	7.0	38 28.06	1.612	4.7	3	39 45 58.2	8.35	4.7	3
408	B. A. C. 6764 . . .	7.0	38 30.85	1.612	4.7	3	39 46 25.0	8.36	4.7	3
409	B. A. C. 6762 . . .	. .	38 46.28	2.458	4.8	1	63 9 52.2	8.38	4.8	1
410	Anonymous . . .	. .	19 44 10.66	+ 2.912	4.8	1	82 24 51.8	— 8.81	4.8	1
411	B. A. C. 6806 . . .	. .	44 59.97	2.122	4.7	1	51 36 20.3	8.87	4.7	1
412	B. A. C. 6813 . . .	. .	46 6.03	2.124	4.7	1	51 36 10.8	8.96	4.7	1
413	XIX, 14	. .	46 44.97	3.610	4.8	1	114 15 9.8	9.01	4.8	1
414	B. A. C. 6879 . . .	. .	55 54.75	2.466	4.7	1	62 35 39.1	9.72	4.7	1
415	Anonymous . . .	. .	19 57 16.90	+ 3.338	4.5	1	102 49 39.9	— 9.82	4.5	1
416	B. A. C. 6895 . . .	. .	57 47.69	1.697	4.8	1	40 14 44.4	9.86	4.8	1
417	B. A. C. 6912 . . .	. .	20 1 28.52	2.577	4.5	2	66 44 52.6	10.14	4.5	2
418	B. A. C. 6959 . . .	6.5	9 1.52	1.672	4.7	2	38 54 52.5	10.70	4.7	2
419	B. A. C. 6962 . . .	. .	9 20.46	1.884	4.7	3	43 33 52.6	10.73	4.7	2
420	B. A. C. 6973 . . .	. .	20 10 32.86	+ 2.488	4.8	2	62 34 16.2	— 10.82	4.8	2
421	XX, 2	. .	10 35.15	3.591	4.7	1	114 45 33.2	10.82	4.7	1
422	XX, 3	8.0	11 24.84	3.579	4.8	1	114 17 3.7	10.88	4.8	1
423	B. A. C. 6983 . . .	6.0	11 34.63	1.854	4.8	2	42 40 17.7	10.89	4.8	2
424	XX, 4	. .	11 43.30	3.777	4.7	3	122 7 15.6	10.90	4.7	3

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			h. m. s.	s.			° ′ ″	″		
425	XX, 5	. .	20 12 9.84	+ 3.856	4.7	1	124 58 35.6	− 10.93	4.7	1
426	B. A. C. 6986 . . .	6.0	12 27.43	2.133	4.8	1	50 1 25.9	10.96	4.8	1
427	B. A. C. 6990 . . .	5.5	13 8.64	2.210	4.7	2	52 21 27.9	11.01	4.7	2
428	B. A. C. 7029 . . .	. .	18 49.69	2.391	4.3	1	58 12 55.5	11.42	4.3	1
429	B. A. C. 7041 . . .	. .	21 2.70	2.083	4.7	1	47 48 23.3	11.58	4.7	1
430	XX, 7	7.8	20 21 40.61	+ 3.497	4.7	3	111 19 2.5	− 11.62	4.7	3
431	B. A. C. 7061 . . .	6.0	22 54.20	2.223	4.7	1	51 58 21.4	11.71	4.7	1
432	XX, 8	8.0	22 59.83	3.701	4.7	1	120 6 38.1	11.72	4.7	1
433	XX, 9	7.0	23 13.61	3.686	4.7	2	119 31 58.9	11.73	4.7	2
434	B. A. C. 7083 . . .	7.0	25 49.85	1.978	4.7	3	44 29 54.7	11.92	4.7	2
435	XX, 10	6.5	20 26 42.77	+ 3.926	4.7	3	128 31 8.6	− 11.98	4.7	3
436	B. A. C. 7101 . . .	. .	28 31.05	2.144	4.7	1	48 57 22.6	12.11	4.7	1
437	XX, 12	8.0	30 16.76	3.495	4.7	3	111 46 17.8	12.23	4.7	3
438	XX, 11	8.0	30 21.35	3.519	4.7	1	112 52 48.6	12.23	4.7	1
439	B. A. C. 7121 . . .	. .	31 38.40	2.806	4.7	2	75 50 31.3	12.32	4.7	2
440	XX, 13	. .	20 32 25.38	+ 3.778	4.7	1	123 52 34.0	− 12.38	4.7	1
441	B. A. C. 7169 . . .	6.8	34 42.13	− 3.521	4.8	4	8 59 42.7	12.53	4.8	3
442	B. A. C. 7164 . . .	. .	35 56.55	+ 2.426	4.7	1	58 8 22.2	12.62	4.7	1
443	B. A. C. 7178 . . .	4.8	36 3.31	− 3.479	4.8	4	9 0 36.6	12.62	4.8	3
444	B. A. C. 7176 . . .	. .	37 37.28	+ 1.279	4.7	3	29 56 58.8	12.73	4.7	3
445	B. A. C. 7193 . . .	. .	20 39 58.24	+ 1.288	4.7	1	29 51 9.6	− 12.89	4.7	1
446	B. A. C. 7204 . . .	5.0	41 6.86	2.397	4.8	3	56 30 2.5	12.97	4.8	3
447	B. A. C. 7213 . . .	. .	42 30.19	2.334	4.8	1	53 58 17.2	13.06	4.8	1
448	XX, 16	7.0	44 1.41	3.619	4.7	2	118 27 51.6	13.16	4.7	2
449	XX, 17	7.0	44 31.93	3.658	4.8	1	121 10 2.0	13.19	4.8	1
450	B. A. C. 7241 . . .	7.0	20 45 36.48	+ 2.118	4.8	1	46 24 51.6	− 13.26	4.8	2
451	XX, 18	8.5	47 34.03	3.661	4.7	3	120 36 59.2	13.39	4.7	3
452	B. A. C. 7253 . . .	6.0	48 47.51	2.119	4.8	5	46 5 18.6	13.47	4.8	5
453	B. A. C. 7259 . . .	7.8	49 26.07	2.121	4.8	3	46 5 27.6	13.51	4.8	3
454	B. A. C. 7257 . . .	. .	49 37.95	2.861	4.8	1	77 54 43.9	13.52	4.8	1
455	B. A. C. 7372 . . .	. .	21 8 20.63	+ 2.920	4.7	1	80 30 9.4	− 14.69	4.7	1
456	B. A. C. 7377 . . .	. .	8 35.78	1.531	4.7	2	30 31 56.3	14.70	4.7	2
457	XXI, 4	. .	18 30.04	3.758	4.7	1	128 22 17.5	15.28	4.7	1
458	XXI, 5	. .	19 28.41	3.437	4.7	1	112 57 20.0	15.33	4.7	1
459	B. A. C. 7448 . . .	. .	19 44.89	2.005	4.7	2	38 53 2.2	15.35	4.7	2
460	XX, 7	. .	21 27 26.86	+ 3.554	4.8	1	120 15 15.0	− 15.77	4.8	1
461	XX, 8	. .	27 35.96	3.647	4.7	2	124 53 6.6	15.78	4.7	2
462	XX, 9	8.0	28 3.33	3.439	4.7	1	114 0 49.9	15.81	4.7	1
463	B. A. C. 7512 . . .	7.5	30 7.01	2.063	4.8	3	38 51 45.2	15.92	4.8	3
464	XXI, 10	8.0	31 13.32	3.753	4.7	3	130 5 42.6	15.97	4.7	3

Number.	Name of Star.	Magnitude.	Mean Right Ascension, 1874.0.	Annual Precession.	Mean year.	No. of obs.	Mean N. P. Distance, 1874.0.	Annual Precession.	Mean year.	No. of obs.
			h. m. s.	s.			° ′ ″	″		
465	XXI, 11	. .	21 31 44.70	+ 3.448	4.8	2	115 0 53.6	— 16.00	4.8	2
466	XXI, 13	. .	31 46.84	3.368	4.8	2	110 11 29.1	16.00	4.8	2
467	XXI, 12	7.0	31 47.43	3.498	4.8	3	117 52 13.7	16.01	4.8	3
468	B. A. C. 7520 . . .	. .	31 51.72	2.799	4.9	2	71 14 51.1	16.01	4.9	2
469	XXI, 14	. .	32 40.59	3.459	4.8	1	115 47 23.1	16.05	4.8	1
470	B. A. C. 7548 . . .	8.0	21 35 38.68	+ 2.162	4.7	1	40 53 16.9	— 16.21	4.7	1
471	B. A. C. 7555 . . .	. .	36 33.13	1.982	4.7	1	35 42 0.8	16.25	4.7	1
472	XXI, 15	. .	37 26.18	3.590	4.7	1	123 35 56.9	16.30	4.7	1
473	B. A. C. 7560 . . .	. .	37 37.52	2.124	4.7	1	39 23 4.3	16.31	4.7	1
474	XXI, 16	8.0	37 57.28	3.404	4.8	1	113 8 24.4	16.32	4.8	1
475	B. A. C. 7571 . . .	5.0	21 38 56.45	+ 2.711	4.8	3	64 55 59.9	— 16.37	4.8	3
476	B. A. C. 7585 . . .	6.0	40 16.60	2.757	4.8	3	67 37 53.2	16.44	4.8	3
477	XXI, 17	7.0	40 20.26	3.541	4.7	3	121 28 47.9	16.44	4.7	3
478	Weisse (2) 976 . . .	8.0	40 33.73	2.758	4.9	2	67 38 2.3	16.46	4.9	2
479	XXI, 18	8.0	40 56.03	3.452	4.8	1	116 27 36.2	16.47	4.8	1
480	B. A. C. 7636 . . .	. .	21 48 52.42	+ 2.014	4.7	2	34 22 48.0	— 16.86	4.7	2
481	XXI, 19	. .	53 27.17	3.604	4.6	1	127 9 32.1	17.07	4.6	1
482	B. A. C. 7664 . . .	. .	54 57.05	2.918	4.8	1	77 28 57.3	17.14	4.8	1
483	XXI, 20	. .	55 11.88	3.518	4.6	2	122 44 26.7	17.15	4.6	2
484	B. A. C. 7676 . . .	. .	57 13.74	2.190	4.7	1	37 43 30.5	17.24	4.7	1
485	B. A. C. 7683 . . .	. .	21 57 50.55	+ 2.010	4.7	1	32 36 25.3	— 17.27	4.7	1
486	XXII, 1	. .	22 0 50.60	3.343	4.8	1	112 12 22.3	17.40	4.8	1
487	B. A. C. 7708 . . .	. .	1 16.12	1.844	4.8	3	28 19 56.8	17.42	4.8	4
488	B. A. C. 7712 . . .	6.0	1 55.22	2.818	4.8	2	68 54 34.6	17.45	4.8	2
489	B. A. C. 7736[1] . . .	. .	4 19.89	2.010	4.8	3	31 19 24.6	17.55	4.8	3
490	B. A. C. 7736[2] . . .	. .	22 4 21.86	+ 2.010	4.8	3	31 19 40.4	— 17.56	4.8	3
491	B. A. C. 7733 . . .	. .	4 32.86	2.833	4.7	2	69 38 26.2	17.56	4.7	2
492	B. A. C. 7742 . . .	. .	5 46.31	2.896	4.9	2	74 34 47.1	17.61	4.9	2
493	B. A. C. 7749 . . .	. .	6 29.21	2.072	4.8	2	32 25 10.1	17.64	4.8	2
494	B. A. C. 7755 . . .	. .	7 14.27	2.030	4.9	2	31 12 24.5	17.68	4.9	2
495	B. A. C. 7778 . . .	. .	22 10 24.00	+ 2.146	4.7	4	33 35 3.5	— 17.80	4.7	4
496	B. A. C. 7782 . . .	. .	11 53.84	2.151	4.7	2	33 24 28.3	17.86	4.7	2
497	B. A. C. 7799 . . .	. .	15 29.08	2.190	4.8	1	33 42 54.2	18.00	4.8	1
498	B. A. C. 7807 . . .	. .	17 35.84	2.860	4.8	1	69 47 15.7	18.09	4.8	1
499	XXII, 4	. .	19 5.94	3.384	4.6	1	118 39 4.5	18.14	4.6	1
500	B. A. C. 7820 . . .	. .	22 19 24.70	+ 2.422	4.7	2	41 9 42.8	— 18.15	4.7	1
501	B. A. C. 7851 . . .	5.5	23 1.89	— 3.862	4.8	6	4 31 38.2	18.29	4.8	5
502	B. A. C. 7851, S. P. .	5.5	22 59.66	— 3.862	5.0	2	4 31 37.2	18.29	5.0	1
503	B. A. C. 7846 . . .	. .	24 26.37	+ 2.338	4.8	2	36 23 54.7	18.34	4.8	2
504	XXII, 7	. .	28 40.46	3.310	4.6	1	114 38 30.3	18.48	4.6	1

Number.	Name of Star.	Magnitude.	Mean Right Ascension, 1874.0.	Annual Precession.	Mean year.	No. of obs.	Mean N. P. Distance, 1874.0.	Annual Precession.	Mean year.	No. of obs.
			h. m. s.	s.			° ′ ″	″		
505	B. A. C. 7875 . . .	. .	22 29 22.01	+ 2.138	4.7	1	28 52 20.5	— 18.51	4.7	1
506	XXII, 8	8.5	30 40.28	3.362	4.7	3	119 41 52.2	18.55	4.7	3
507	XXII, 9	7.8	31 39.08	3.491	4.8	2	129 48 33.4	18.58	4.8	2
508	XXII, 10	6.0	31 44.04	3.408	4.8	2	123 44 8.6	18.59	4.8	2
509	B. A. C. 7893	. .	32 46.88	2.992	4.8	1	71 7 44.0	18.62	4.8	1
510	XXII, 11	8.0	22 35 50.94	+ 3.452	4.8	3	128 19 43.8	— 18.72	4.8	3
511	B. A. C. 7923	. .	37 5.83	2.804	4.9	1	60 26 16.2	18.76	4.9	1
512	XXII, 12	7.0	38 37.47	3.298	4.8	1	115 53 56.3	18.80	4.8	2
513	B. A. C. 7937	. .	39 20.57	2.916	4.9	2	71 17 49.4	18.83	4.9	2
514	B. A. C. 7943	5.0	40 23.97	2.979	4.8	3	78 28 22.0	18.86	4.8	3
515	B. A. C. 7953	. .	22 42 23.51	+ 2.366	4.6	1	32 10 46.6	— 18.92	4.6	1
516	XXII, 14	. .	48 44.73	3.228	4.6	1	110 48 36.6	19.09	4.6	1
517	XXII, 16	. .	51 33.73	3.360	4.7	1	126 11 34.3	19.17	4.7	1
518	B. A. C. 8023	6.5	56 7.78	2.745	4.7	1	48 21 4.2	19.28	4.7	1
519	XXIII, 3	8.0	23 3 21.38	3.310	4.7	1	126 4 54.4	19.44	4.7	1
520	B. A. C. 8076	7.0	23 4 38.12	+ 2.775	4.7	2	47 7 55.1	— 19.47	4.7	2
521	B. A. C. 8158	. .	18 24.59	+ 2.703	4.7	1	33 9 22.1	19.72	4.7	1
522	B. A. C. 8213	. .	27 51.23	— 0.086	4.8	3	3 23 14.8	19.86	4.8	3
523	B. A. C. 8317	. .	49 15.38	+ 2.977	4.7	1	33 17 19.0	20.03	4.7	1
524	XXIII, 16	. .	50 0.36	3.100	4.7	2	115 26 20.0	20.04	4.7	2
525	XXIII, 17	. .	23 50 58.17	+ 3.112	4.8	2	127 24 23.3	— 20.04	4.8	2
526	XXIII, 18	. .	51 7.51	3.107	4.8	3	123 53 29.3	20.04	4.8	4
527	Anonymous	. .	52 6.39	3.108	4.8	3	127 34 45.0	20.04	4.8	3

RIGHT ASCENSIONS, NORTH-POLAR DISTANCES, AND SEMI-DIAMETERS

OF THE

SUN, MOON, AND PLANETS;

DEDUCED FROM

OBSERVATIONS WITH THE TRANSIT CIRCLE,

AND

COMPARED WITH THE TABLES.

1874.

RIGHT ASCENSIONS, NORTH-POLAR DISTANCES, AND SEMI-DIAMETERS

OF THE

SUN, MOON, AND PLANETS.

SUN.

Date.	Observer.	Limb.	Apparent Right Ascension of Center.	Corr'n to Am. Eph.	Sidereal Time of Transit of Semi-diameter.	Corr'n to Am. Eph.	Limb.	Geocentric N. P. Distance of Center.	Corr'n to Am. Eph.	Vertical Semi-diameter.	Corr'n to Am. Eph.
1874.			h. m. s.	s.	m. s.	s.		° ′ ″	″	′ ″	′
Jan. 10	S.	.	19 28 8.55	+ 0.17	1 10.43	— 0.07	.	111 54 46.2	+ 4.7	16 17.8	— 0.4
12	E.	.	19 36 48.62	+ 0.01	1 10.25	— 0.08	.	111 35 34.3	— 0.8	17.6	— 0.4
15	Sk.	.	19 49 44.63	+ 0.30	1 10.03	— 0.04	.	111 3 48.3	+ 0.9	17.1	— 0.7
17	Sk.	.	19 58 18.40	+ 0.28	1 9.78	— 0.09	.	110 40 33.7	— 0.6	16.9	— 0.8
20	E.	.	20 11 3.20	— 0.16	1 9.52	— 0.05	.	110 2 50.9	+ 2.1	17.0	— 0.4
26	S.	.	20 36 12.62	0.00	1 8.78	— 0.04	.	108 37 22.5	+ 1.3	15.1	— 1.7
29	F.	.	20 48 36.34	+ 0.21	1 8.56	— 0.02	.	107 49 57.1	— 2.9	17.2	+ 0.8
Feb. 4	Sk.	.	21 13 0.89	+ 0.13	1 7.78	— 0.11	.	106 6 56 7	+ 1.2	15.8	+ 0.3
10	E.	.	21 36 56.36	— 0.08	1 7.18	— 0.03	.	104 13 52.4	+ 0.2	14.5	+ 0.1
12	F.	.	21 44 48.82	— 0.03	1 7.04	+ 0.05	.	103 34 14.3	+ 1.4	13.9	— 0.1
16	Sk.	.	22 0 24.90	+ 0.13	1 6.44	— 0.02	.	102 12 16.1	— 0.7	11.2	— 2.0
17	E.	.	22 4 16.95	+ 0.01	1 6.35	— 0.11	.	101 51 16.7	— 0.8	11.1	— 1.9
26	F.	.		. .	. . .	. .	.	98 34 51.1	+ 0.2	10.3	— 0.7
Mar. 2	F.	I	22 53 35.82	0.00	. . .	. .	.	97 3 58.8	— 2 5	8.4	— 1.6
4	Sk.	.	23 0 2.84	+ 0.20	1 5.10	— 0.09	.	96 17 59.7	— 0.4	7.6	— 2.0
11	S.	.	23 26 53.70	— 0.01	1 4.84	+ 0.04	.	93 34 28.6	+ 0.9	7.9	+ 0.2
14	Sk.	.	23 37 53.60	— 0.05	1 4.64	— 0.04	.	92 23 33.7	— 1.9	6.4	— 0.5
28	Sk.	.	0 28 52.70	+ 0.11	1 4.34	— 0.12	.	86 52 42.4	— 0.3	2.6	— 0.5
30	F.	.	0 36 8.71	+ 0.03	1 4.44	— 0.04	.	86 6 2.6	— 0.9	16 1.6	— 0.9
April 11	F.	.	1 19 57.14	+ 0.05	1 4.88	+ 0.07	N.	81 33 47.3	+ 0.2	. .	. .
13	Sk.	.	1 27 18.68	+ 0.02	1 4.82	— 0.08	.	80 50 5.6	+ 0.6	15 57.8	— 0.8
21	Sk.	.	1 56 59.50	+ 0.15	1 5.28	— 0.07	.	78 1 48.3	+ 1.2	56.9	+ 0.3
30	E.	.	2 30 55.67	+ 0.05	1 5.98	— 0.02	.	75 7 41.6	+ 0.1	54.8	+ 0.4
May 7	Sk.	.	2 57 48.68	+ 0.05	1 6.46	— 0.10	.	73 5 53.1	+ 5.4	46.6	+ 6.1
11	Sk.	.	3 13 23.17	+ 0.03	1 6.87	— 0.02	.	72 2 10.6	+ 0.4	52.4	+ 0.5
19	Sk.	.	3 45 0.29	+ 0.10	1 7.47	— 0.07	.	70 9 35.7	— 0.7	50.1	— 0.2
26	S.	.	4 13 8.37	— 0.12	1 8.04	— 0.01	.	68 48 47.5	+ 2.7	48.6	— 0.6
27	Sk.	.	4 17 11.76	+ 0.13	1 8.04	— 0.08	.	68 33 40.3	+ 0.2	48.5	— 0.5
28	E.	.	4 21 15.22	0.00	1 8.14	— 0.05	.	68 28 54.6	— 0.8	48.3	— 0.6
June 1	E.	.	4 37 33.97	— 0.05	1 8.41	+ 0.04	.	67 53 41.5	— 0.2	48.0	— 0.4
2	F.	II	4 41 39.81	+ 0.04	. . .	. .	N.	67 45 51.5	+ 1.1	. .	. .
9	E.	.	5 10 30.11	— 0.01	1 8.72	— 0.07	.	67 1 51.0	+ 0.6	47.3	0.0
10	F.	.	5 14 38.40	— 0.13	1 8.78	— 0.05	.	96 57 8.0	+ 0.2	46.0	— 1.2
13	E.	.	5 27 5.08	— 0.05	1 8.92	+ 0.02	.	66 45 30.3	+ 1.0	46.8	— 0.1
15	S.	.	5 35 23.75	+ 0.03	1 8.89	— 0.05	.	66 39 48.4	+ 1.9	46.1	— 0.7
18	F.	II	5 47 52.43	+ 0.10	. . .	. .	.	66 34 15.7	— 2.2	45.7	— 0.9
19	S.	I	5 52 2.01	+ 0.05	. . .	. .	.		. .	. .	. .
22	F.	.	6 4 30.96	+ 0.16	1 8.96	— 0.02	.	66 32 48.0	+ 0.7	46.5	+ 0.1
23	E.	.	6 8 40.18	— 0.12	1 8.92	— 0.05	.	66 33 27.1	+ 0.3	48.0	+ 1.7
25	E.	.	6 16 58.97	— 0.01	1 8.90	— 0.04	.	66 35 58.0	— 2.0	46.0	— 0.3
29	E.	.	6 33 34.52	— 0.02	1 8.78	— 0.06	.	66 46 2.4	+ 0.8	45.5	+ 0.3
July 7	E.	.	7 6 34.32	— 0.01	1 8.44	— 0.07	.	67 25 29.3	+ 0.2	46.4	+ 0.2
9	S.	.	7 14 46.05	— 0.01	1 8.36	— 0.04	.	67 39 19.2	+ 0.9	45.4	— 0.8
10	Sk.	.	7 18 51.38	+ 0.04	1 8.30	— 0.04	.	67 46 49.3	+ 1.5	44.9	— 0.4
15	E.	.		. .	. . .	. .	.	68 29 52.5	— 4.1	46.1	— 0.4
17	S.	.	7 47 15.40	— 0.15	1 7.90	+ 0.03	.		. .	. .	. .
23	E.	.	8 11 15.50	— 0 07	1 7.31	— 0.08	.	69 57 48.5	— 0.7	46.2	— 0.9
30	E.	.	8 38 48.40	— 0 14	1 6.68	— 0.12	.	71 32 17.0	— 0.3	46.9	— 1.0
Aug. 6	S.	II	9 5 52.21	— 0.14	. . .	. .	S.	73 21 33.5	— 1.5	. .	. .
15	Sk.	II	9 39 58.74	+ 0.02	. . .	. .	.	76 1 16.6	— 0.6	49.0	— 0.4
19	Sk.	.	9 54 54.06	+ 0.07	1 5.19	+ 0.04	.	77 18 18.9	+ 2.3	15 51.5	+ 0.5

SUN.

Date.	Observer.	Limb	Apparent Right Ascension of Center.	Corr'n to Am. Eph.	Sidereal Time of Transit of Semi-diameter.	Corr'n to Am. Eph.	Limb.	Geocentric N P. Distance of Center.	Corr'n to Am. Eph.	Vertical Semi-diameter.	Corr'n to Am. Eph.
1874.			h. m. s.	s.	m. s.	s.		° ′ ″	″	′ ″	″
Sept. 18	F.	.	11 43 47.04	− 0.07	1 4.02	− 0.04	.	88 14 35.0	− 0.2	15 58.6	+ 0.5
21	E.	.	11 54 33.41	+ 0.08	1 4.07	− 0.01	.	89 24 34.5	− 0.1	16 0.6	+ 1.7
22	F.	.	11 58 8.92	+ 0.05	1 4.08	− 0.01	N.	89 47 55.9	− 3.4	. . .	. .
23	S.	.	12 1 44.46	− 0.04	1 4.09	− 0.02	.	90 11 21.6	+ 0.9	15 59.4	0.0
24	Sk.	.	12 5 20.32	+ 0.07	1 4.10	− 0.04	.	90 34 44.9	+ 0.2	59.8	+ 0.1
25	E.	.	12 8 56.15	0.00	1 4.14	− 0.03	.	90 58 7.5	− 1.4	59.5	− 0.5
26	F.	.	12 12 32.32	+ 0.10	1 4.14	− 0.06	.	91 21 30.4	− 2.7	15 59.4	− 0.9
Oct. 1	S.	.	12 30 35.96	− 0.08	1 4.38	0.00	.	. . .	. .	. . .	. .
2	Sk.	.	12 34 13.70	+ 0.06	1 4.35	− 0.07	.	93 41 39.9	+ 1.2	16 0.4	− 1.5
3	E.	.	12 37 51.56	− 0.03	1 4.40	− 0.07	.	94 4 57.1	+ 3.7	15 55.6	− 6.6
5	S.	.	12 45 8.55	− 0.01	1 4.58	+ 0.01	.	94 51 11.3	− 2.7	16 3.7	+ 1.0
9	S.	.	12 59 47.21	− 0.09	1 4.76	− 0.06	.	96 23 10.7	+ 0.3	3.3	− 0.5
15	E.	.	13 32 59.44	− 0.10	1 5.25	− 0.03	.	98 38 24.6	− 1.1	16 6.2	+ 0.7
19	E.	.	13 36 58.64	+ 0.11	1 5.58	− 0.05	.	100 6 17.0	+ 4.7	15 59.1	− 7.5
20	F.	.	13 40 45.02	+ 0.24	1 5.65	− 0.07	.	100 27 43.2	− 4.1	16 5.5	− 1.4
23	E.	.	13 52 7.39	− 0.06	1 5.96	− 0.05	.	101 31 31.0	− 3.5	6.4	− 1.3
26	Sk.	.	14 3 36.50	+ 0.21	1 6.25	− 0.08	.	102 33 49.2	+ 1.8	9.9	+ 1.4
29	S.	.	14 15 11.72	− 0.12	1 6.63	− 0.02	.	103 34 15.4	− 0.2	7.7	− 1.5
Nov. 4	E.	.	14 38 44.24	− 0.17	1 7.24	− 0.09	.	105 29 10.9	− 5.2	9.6	− 1.1
6	S.	II	14 46 41.92	− 0.02	. . .	. .	S.	106 5 41.2	+ 2.3	. .	. .
7	Sk.	.	14 50 42.19	+ 0.21	1 7.60	− 0.09	.	106 23 26.7	+ 0.2	11.5	+ 0.1
11	Sk.	.	15 6 51.05	+ 0.42	1 7.89	− 0.28	.	107 31 46.6	0.0	11.3	− 1.0
12	E.	.	15 10 54.82	− 0.09	1 8.23	− 0.06	.	107 48 6.2	− 0.9	13.6	+ 1.1
14	S.	.	15 19 5.79	− 0.20	1 8.64	+ 0.11	.	108 19 49.9	− 1.8	12.8	+ 0.1
24	E.	.	16 0 50.26	− 0.08	1 9.58	− 0.08	.	110 38 9.2	+ 0.4	13.4	− 1.5
25	F.	.	16 5 5.31	+ 0.19	1 9.76	0.00	.	110 49 55.7	− 2.0	13.8	− 1.3
27	Sk.	.	16 13 36.94	0.00	1 9.80	− 0.16	.	111 12 26.1	+ 1.1	14.8	− 0.6
30	S.	.	16 26 30.27	+ 0.20	1 10.29	+ 0.04	.	111 43 6.6	+ 0.6	16.7	+ 0.8
Dec. 4	S.	.	16 43 50.26	− 0.06	1 10.56	− 0.02	.	112 18 9.9	− 1.4	14.8	− 1.6
5	Sk.	.	16 48 11.85	− 0.05	1 10.51	− 0.14	.	112 25 53.1	− 0.2	15.5	− 1.1
7	F.	.	16 56 56.70	− 0.03	1 10.72	− 0.07	.	112 39 56.3	− 2.1	16.9	+ 0.1
8	S.	.	17 1 19.87	− 0.03	1 10.88	+ 0.03	.	112 46 23.2	− 2.3	16.1	− 0.8
11	F.	.	17 14 32.12	+ 0.10	1 10.98	− 0.04	.	113 2 45.9	− 0.3	14.3	− 3.0
15	F.	.	17 32 13.19	+ 0.17	1 11.32	+ 0.13	.	113 18 46.1	+ 1.6	16.9	− 0.8
18	E.	.	17 45 31.16	− 0.07	1 11.24	− 0.02	.	113 24 59.5	+ 2.3	17.1	− 0.8
21	Sk.	.	17 58 50.59	+ 0.05	1 11.24	− 0.06	.	113 27 26.9	+ 0.7	17.5	− 0.6
23	F.	.	18 7 43.88	+ 0.25	1 11.36	+ 0.05	.	113 26 45.9	+ 1.8	16 17.8	− 0.4

MOON.

Date.	Mean Time of Transit of Center.	Observer.	Limb.	Apparent Right Ascension of Center.	Correction to Tables of— Peirce.	Hansen.	Limb.	Geocentric N. P. Distance of Center.	Correction to Tables of— Peirce.	Hansen.
1874.	h. m. s.			h. m. s.	s.	s.		° ′ ″	″	″
Jan. 10	18 23 29.7	S.	II	13 46 42.60	− 0.29	− 0.40	.		. .	. .
11	19 5 57.5	Sk.	II	14 33 13.99	− 0.24	− 0.42	.		. .	. .
22	4 13 43.9	S.	I	0 21 55.90	− 0.15	− 0.43	.		. .	. .
23	5 2 19.8	Sk.	I	1 14 36.35	− 0.22	− 0.50	S.	84 6 0.4	+ 2.0	+ 4.2
24	5 51 16.8	E.	I	2 7 37.96	− 0.19	− 0.54	S.	77 44 21.8	+ 1.6	+ 3.7
28	9 25 33.5	E.	I	5 58 16.06	+ 0.22	− 0.64	N.	62 46 5.5	+ 0.3	+ 1.0
29	10 21 45.7	F.	I	6 58 34.05	+ 0.19	− 0.62	.		. .	. .
31	12 7 23.4	Sk.	I	8 52 22.21	+ 0.01	− 0.44	N.	67 13 58.5	− 0.9	− 1.7
Feb. 26	9 11 50.8	F.	I	7 38 51.23	+ 0.07	− 0.57	N.	63 31 57.9	− 1.1	− 0.7
27	10 3 30.8	S.	I	8 34 36.33	− 0.05	− 0.72	N.	66 2 59.2	− 3.3	− 3.2
28	10 51 45.3	Sk.	I	9 26 55.31	+ 0.21	− 0.50	N.	69 42 8.0	− 2.2	− 2.7
March 1	11 36 39.1	E.	I	10 15 52.96	− 0.17	− 0.69	N.	74 12 40.4	− 2.9	− 3.9
2	12 18 47.2	F.	II	11 2 4.60	+ 0.07	− 0.37	.		. .	. .
4	13 38 8.7	Sk.	II	12 29 32.19	− 0.19	− 0.46	.		. .	. .
10	18 6 25.9	S.	II	17 22 12.78	0.00	− 0.39	S.	116 49 41.4	− 0.4	− 3.5
25	7 7 35.6	E.	I	7 20 42.63	− 0.34	− 0.64	N.	62 50 13.7	+ 0.7	+ 1.2
26	8 0 32.7	F.	I	8 17 44.91	− 0.31	− 0.65	N.	64 58 39.8	− 3.2	− 2.6
28	9 35 25.0	Sk.	I	10 0 45.93	− 0.06	− 0.47	N.	72 36 32.0	− 2.6	− 2.6
29	10 18 1.9	E.	I	10 47 26.39	− 0.11	− 0.57	N.	77 33 10.4	− 2.3	− 3.1
30	10 58 29.3	F.	I	11 31 57.02	+ 0.06	− 0.43	.		. .	. .
April 10	19 45 4.6	E.	II	21 3 21.06	+ 0.89	− 0.63	N.	112 17 49.0	− 2.5	+ 2.5
11	20 39 46.8	F.	II	22 2 8.40	+ 0.90	− 0.78	.		. .	. .
22	5 54 8.9	E.	I	7 57 27.34	− 0.44	− 0.71	N.	63 57 40.3	+ 2.4	+ 1.6
26	8 57 48.8	E.	I	11 17 23.58	− 0.37	− 0.41	N.	81 4 50.8	(+ 42.5)	(+ 43.1)
29	10 55 37.4	Sk.	I	13 27 21.23	+ 0.02	− 0.23	N.	97 55 34.0	+ 0.1	− 1.8
May 3	13 56 52.2	Sk.	II	16 44 52.01	0.00	− 0.68	.		. .	. .
5	15 46 13.0	F.	II	18 42 23.95	+ 0.42	− 0.39	N.	117 51 0.1	+ 3.0	+ 1.0
6	16 42 44.1	S.	II	19 43 0.88	+ 0.17	− 0.63	.		. .	. .
7	17 38 22.0	Sk.	II	20 42 44.47	+ 0.06	− 0.79	.		. .	. .
8	18 32 5.6	E.	II	21 40 33.46	+ 0.13	− 0.87	N.	109 18 56.7	− 3.4	+ 1.7
10	20 13 49.9	S.	II	23 30 27.53	+ 0.66	− 0.71	.		. .	. .
19	3 41 54.7	Sk.	I	7 31 18.45	− 0.02	− 0.57	.		. .	. .
26	8 53 34.6	S.	I	13 11 25.44	− 0.76	− 0.58	.		. .	. .
27	9 23 54.5	Sk.	I	13 55 48.52	− 0.47	− 0.33	N.	101 25 0.5	+ 5.0	+ 5.9
28	10 16 29 2	E.	I	14 42 26.76	− 0.63	− 0.60	N.	106 30 57.4	− 2.5	− 2.7
29	11 2 14.0	F.	I	15 32 15.68	− 0.46	− 0.50	N.	110 59 58.7	− 2.5	− 4.3
30	11 51 43.1	S.	I	16 25 49.47	− 0.32	− 0.60	S.	114 34 59.4	+ 0.4	− 2.6
June 1	13 40 52.4	E.	II	18 23 9.79	+ 0.15	− 0.49	S.	117 50 13.3	+ 2.5	− 0.8
8	19 46 9.3	S.	II	0 57 2.56	+ 0.34	− 0.87	.		. .	. .
9	20 35 56.0	E.	II	1 50 54.02	+ 0.49	− 0.88	N.	79 6 0.1	− 2.4	+ 5.8
18	4 5 38.6	F.	I	9 53 23.02	− 0.48	− 0.52	N.	72 3 50.7	− 0.5	− 3.1
21	6 11 9.5	E.	I	12 11 4.21	− 0.60	− 0.41	N.	88 12 56.8	− 2.1	− 2.6
22	6 50 13.7	F.	I	12 54 11.39	− 0.59	− 0.38	N.	93 53 26.5	− 3.0	− 2.8
24	8 11 25.4	Sk.	I	14 23 29.52	− 0.59	− 0.42	N.	104 40 28.8	+ 9.4	+ 10.1
29	12 29 33.9	E.	II	19 2 3.20	− 0.18	− 0.66	S.	117 28 21.9	+ 4.2	+ 1.8
July 8	20 15 27.1	Sk.	II	3 24 41.95	+ 0.49	− 0.98	N.	69 26 12.0	− 0.1	+ 6.2
19	4 46 11.5	E.	I	12 36 15.89	− 0.52	− 0.32	N.	91 48 40.8	− 1.3	− 3.8
23	7 34 51.7	E.	I	15 41 10.00	− 0.39	− 0.35	N.	111 57 37.9	− 0.4	− 1.2
30	14 1 27.3	E.	II	22 36 24.97	− 0.01	− 0.69	N.	103 12 35.0	+ 0.3	+ 4.1
Aug. 4	18 11 23.1	E.	II	3 6 44.67	+ 0.65	− 0.80	N.	70 43 13.0	− 0.7	+ 6.0
15	2 42 34.3	Sk.	I	12 18 45.34	− 0.34	− 0.18	.		. .	. .
27	12 41 48.1	Sk.	II	23 6 56.23	+ 0.25	− 0.49	.		. .	. .
31	16 6 25.5	Sk.	II	2 47 53.49	+ 0.30	− 0.84	.		. .	. .
Sept. 21	8 38 33.0	E.	I	20 41 35.00	− 0.53	− 0.50	S.	113 37 40.7	+ 4.7	+ 2.1
22	9 33 33.9	F.	I	21 40 41.56	− 0.32	− 0.48	S.	108 58 16.7	+ 4.0	+ 2.2
23	10 26 46.4	S.	I	22 37 59.32	− 0.11	− 0.53	S.	103 0 52.0	+ 3.9	+ 4.0
24	11 18 32.1	Sk.	I	23 33 50.08	+ 0.17	− 0.44	S.	96 7 50.0	− 0.3	+ 2.4
25	12 9 44.9	E.	II	0 29 7.83	+ 0.01	− 0.77	.		. .	. .
26	13 1 36.1	F.	II	1 25 4.12	+ 0.26	− 0.57	.		. .	. .
30	16 50 43.9	F.	II	5 30 35.83	− 0.17	− 0.80	.		. .	. .
Oct. 1	17 50 50.4	S.	II	6 34 48.72	− 0.05	− 0.95	.		. .	. .
2	18 48 30.5	Sk.	II	7 36 34.84	+ 0.10	− 0.94	S.	63 4 36.4	− 2.7	− 6.0
4	20 31 41.9	S.	II	9 27 56.28	− 0.02	− 0.81	S.	69 51 21.4	− 1.6	− 5.7
15	3 43 38.3	E.	I	17 20 29.25	− 0.40	− 0.28	.		. .	. .
16	4 37 4.9	F.	I	18 18 1.11	− 0.38	− 0.35	N.	118 17 14.8	+ 8.0	+ 4.1
18	6 26 46.2	Sk.	I	20 15 53.54	− 0.10	− 0 23	S.	115 13 0.9	+ 4.6	+ 2.1

MOON.

Date.	Mean Time of Transit of Center.	Observer.	Limb.	Apparent Right Ascension of Center.	Correction to Tables of—		Limb.	Geocentric N. P. Distance of Center.	Correction to Tables of—	
					Peirce.	Hansen.			Peirce.	Hansen.
1874.	h. m. s.			h. m. s.	s.	s.		° ′ ″	″	″
Oct. 19	7 20 31.4	E.	I	21 13 44.18	— 0.15	—. 0.39	S.	111 21 9.9	+ 2.6	+ 0.9
20	8 12 43 1	F.	I	22 10 0.93	+ 0.01	— 0.31	S.	106 8 9.8	+ 3.4	+ 2.2
22	9 53 56.3	Sk.	I	23 59 23.87	— 0.01	— 0.43	S.	92 46 46.1	+ 4.0	+ 3.4
23	10 44 56.6	E.	I	0 54 29.11	0.00	— 0.54	S.	85 24 5.2	+ 1.5	+ 2.8
25	12 33 52.0	E.	II	2 51 35.54	— 0.16	— 0.88	N.	71 43 8.6	— 5.0	+ 0.9
26	13 33 20.0	Sk.	II	3 55 9.86	— 0.43	— 0.96	N.	66 32 21.8	+ 1.0	+ 3.7
28	15 38 31.2	F.	II	6 8 34.70	— 0.74	— 0.85	N.	61 45 1.5	— 0.3	— 0.1
Nov. 14	4 20 53.5	S.	I	19 56 7.22	+ 0.03	— 0.21	.	. . .	. .	. .
16	6 44 46.2	E.	.	. . .	. .	. .	S.	108 14 46.6	+ 0.7	+ 2.7
21	10 14 37.1	F.	I	2 18 24.77	— 0.14	— 0.56	S.	75 6 47.7	+ 2.9	+ 4.4
Dec. 4	21 16 33.5	Sk.	II	14 13 25.23	— 0.15	— 0.53	.	. . .	. .	. .
14	4 50 44.5	E.	I	22 24 19.79	0.00	— 0.39	S.	104 18 10.2	— 0.9	+ 3.7
15	5 38 4.8	F.	I	23 15 44.52	+ 0.08	— 0.38	S.	98 11 2.9	— 5.0	+ 1.1
18	8 2 5.3	E.	I	1 51 58.30	+ 0.04	— 0.55	S.	77 57 46.3	— 0.5	+ 5.0
19	8 55 27.0	F.	.	. . .	. .	. .	S.	71 49 24.5	— 1.4	+ 2.5
21	10 55 27.0	Sk.	I	4 57 38.19	+ 0.06	— 0.50	N.	63 19 53.6	— 1.0	+ 0.7
22	11 59 53.4	E.	I, II	6 6 11.68	— 0.39	— 0.91	S.	61 54 8.9	— 2.8	— 2.2
23	13 3 30.9	F.	II	7 13 56.24	— 0.34	— 0.87	.	. . .	. .	. .
25	14 57 49.6	Sk.	II	9 16 26.75	— 0.26	— 0.77	S.	69 12 55.5	— 1.2	— 5.9

NOTE.—June 24, record ambiguous; N. P. D. may be 104° 40′ 13″.6.

MERCURY.

Date.	Observer.	Part observed.	Apparent Right Ascension of Center.	Corr'n to Am. Eph.	Sidereal Time of Transit of Semi-diameter.	Corr'n to Am. Eph.	Part observed.	Geocentric N. P. Distance of Center.	Corr'n to Am. Eph.	Vertical Semi-diameter.	Corr'n to Am. Eph.
1874.			h. m. s.	s.	s.	s.		° ′ ″	″	″	″
Jan. 14	Sk.	C.	18 59 20.68	+ 0.36	. .	. .	C.	113 58 50.3	+ 2.3	. .	. .
16	Sk.	C.	19 13 0.84	+ 0.44	. .	. .	C.	113 47 59.9	+ 0.6	. .	. .
Feb. 17	E.	I	22 48 49.50	− 0.11	. .	. .	C.	98 36 43.3	+ 0.2	. .	. .
Mar. 2	F.	I	23 57 49.18	+ 0.11	. .	. .	S.	88 20 57.0	+ 1.8	. .	. .
April 10	F.	II	23 42 54.74	0.00	. .	. .	C.	93 46 47.6	+ 1.0	. .	. .
29	E.	II	1 7 23.85	+ 0.18	. .	. .	N.	85 45 52.0	+ 4.7	. .	. .
May 6	Sk.	C.	1 49 55.72	+ 0.09	. .	. .	C.	81 1 7.1	+ 1.2	. .	. .
June 1	E.	I	5 18 3.97	− 0.27	. .	. .	.	65 17 30.9	+ 2.2	2.7	0.0
9	E.	I	5 27 13.94	− 0.25	. .	. .	.	64 37 42.3	+ 0.1	3.4	+ 0.7
15	S.	I	7 11 20.61	− 0.18	. .	. .	C.	65 39 33.7	− 0.2	. .	. .
22	F.	I	7 52 47.79	− 0.06	. .	. .	.	67 53 37.0	− 0.3	3.5	− 0.1
25	E.	I	8 7 4.70	− 0.26	. .	. .	.	69 2 31.9	+ 6.7	4.3	+ 0.5
29	E.	I	8 22 42.01	− 0.31	. .	. .	.	70 37 51.8	+ 0.4	4.1	0.0
July 6	Sk.	I	8 39 50.72	− 0.35	. .	. .	N.	73 16 19.6	− 0.5	. .	. .
7	E.	I	8 41 9.02	− 0.38	. .	. .	N.	73 36 21.6	− 0.3	. .	. .
9	S.	I	8 42 52.10	− 0.21	. .	. .	C.	74 13 19.3	− 2.3	. .	. .
10	Sk.	I	8 43 14.05	− 0.46	. .	. .	N.	74 30 4.4	− 1.4	. .	. .
Sept. 24	Sk.	C.	12 53 27.30	+ 0.07	. .	. .	C.	95 37 34.5	+ 0.8	. .	. .
25	E.	I	12 59 12.32	+ 0.07	. .	. .	C.	96 21 14.0	+ 3.2	. .	. .
26	F.	I	13 4 54.79	+ 0.01	. .	. .	C.	97 4 15.7	− 0.6	. .	. .
Oct. 1	S.	.	13 32 54.73	+ 0.15	0.23	+ 0.05	.	100 30 57.6	+ 1.1	3.2	+ 0.7
2	Sk.	C.	13 38 25.80	+ 0.12	. .	. .	C.	101 10 27.3	+ 5.3	. .	. .
3	E.	I	13 43 53.03	+ 0.04	. .	. .	C.	101 49 5.1	− 1.2	. .	. .
5	S.	.	13 54 44.55	+ 0.23	0.21	+ 0.03	.	103 4 25.0	− 1.0	3.5	+ 0.9
9	S.	.	14 16 5.68	+ 0.13	0.24	+ 0.05	.	105 25 51.7	+ 4.1	3.6	+ 0.9
15	E.	I	14 47 0.29	+ 0.02	. .	. .	C.	108 31 18.2	+ 2.0	. .	. .
19	E.	I	15 6 26.53	+ 0.13	. .	. .	C.	110 13 56.8	− 1.2	. .	. .
26	Sk.	I	15 35 54.33	+ 0.18	. .	. .	C.	112 22 29.7	+ 2.2	. .	. .
Nov. 24	F.	II	14 53 56.10	+ 0.16	. .	. .	.	103 59 18.1	+ 0.6	3.2	− 0.9
26	Sk.	II	14 57 0.53	+ 0.17	. .	. .	.	104 10 21.3	+ 0.8	3.8	0.0
Dec. 18	F.	II	16 45 57.40	+ 0.28	. .	. .	.	112 1 1.5	+ 0.2	2.6	0.0
20	Sk.	C.	16 58 42.01	+ 0.39	. .	. .	C.	112 36 32.9	+ 0.9	. .	. .
22	F.	II	17 11 39.57	+ 0.41	. .	. .	C.	113 8 0.7	+ 4.4	. .	. .
29	E.	II	17 58 26.53	+ 0.40	. .	. .	C.	114 21 58.8	+ 1.8	. .	. .

VENUS.

Date.	Observer.	Partobs'd.	Apparent Right Ascension of Center.	Correction to— Am. Eph.	Correction to— Le Verrier's Tables.	Sid. Time of Transit of Semi-diam.	Corr'n to Am. Eph.	Partobs'd.	Geocentric N. P. Distance of Center.	Correction to— Am. Eph.	Correction to— Le Verrier's Tables.	Vertical Semi-diameter.	Corr'n to Am. Eph.
1874.			h. m. s.	s.	s.	s.	s.		° ′ ″	″	″	″	″
Jan. 14	Sk.	C.	19 9 56.14	+ 0.18	+ 0.17	. .	. .	C.	112 56 14.1	+ 4.4	+ 2.7	. .	. .
16	Sk.	II	19 20 48.20	+ 0.15	+ 0.15	. .	. .	C.	112 41 19.2	+ 3.2	+ 1.5	. .	. .
Apr. 11	F.	I	2 5 53.65	− 0.31	− 0.29	. .	. .	.	77 54 20.0	− 0.5	+ 0.6	5.2	+ 0.1
13	Sk.	.	2 15 20.06	− 0.17	− 0.14	0.33	− 0.02	.	77 0 29.1	+ 0.1	+ 1.2	5.4	+ 0.3
30	E.	.		. .	. .	. .	. .	.	77 23 29.9	− 0.8	+ 0.8	4.8	− 0.5
May 7	Sk.	.	4 13 55.10	− 0.08	− 0.09	0.39	0.00	.	68 20 33.7	− 0.7	+ 1.0	5.5	+ 0.2
11	Sk.	.	4 34 40.03	− 0.15	− 0.14	0.37	− 0.03	.	67 23 13.0	− 1.0	+ 0.6	6.1	+ 0.7
27	Sk.	.	5 59 31.26	− 0.09	− 0.13	0.42	0.00	.	65 20 4.0	− 2.1	− 0.6	6.7	+ 1.1
28	E.	I	6 4 52.17	− 0.12	− 0.16	. .	. .	.	65 18 21.2	− 2.2	− 0.8	6.0	+ 0.4
June 1	E.	I	6 26 14.96	− 0.13	− 0.18	. .	. .	.	65 18 44.6	− 1.4	− 0.1	6.2	+ 0.5
2	F.	II	6 31 35.15	− 0.07	− 0.14	. .	. .	.	65 20 39.1	− 0.7	+ 0.6	5.1	− 0.6
9	E.	I	7 8 43.12	− 0.14	− 0.17	. .	. .	.	65 53 54.3	− 0.9	+ 0.2	6.2	+ 0.3
13	E.	I	7 29 41.12	− 0.03	− 0.11	. .	. .	.	66 28 14.6	− 1.3	− 0.6	8.1	+ 2.1
15	S.	I	7 40 4.55	+ 0.01	− 0.09	. .	. .	.		. .	. .	. .	. .
18	F.	I	7 55 31.53	− 0.11	− 0.19	. .	. .	.	67 26 8.5	− 2.1	− 2.0	6.8	+ 0.7
25	E.	I	8 30 51.81	− 0.09	− 0.18	. .	. .	.	69 13 17.5	− 2.5	− 2.2	6.8	+ 0.5
29	E.	I	8 50 33.70	− 0.11	− 0.19	. .	. .	.	70 27 4.6	+ 1.8	+ 1.7	6.5	+ 0.1
July 6	Sk.	I	9 24 7.34	− 0.20	− 0.24	. .	. .	N.	72 55 19.5	− 1.0	− 1.5	. .	. .
7	E.	I	9 28 49.49	− 0.08	− 0.21	. .	. .	.	73 18 21.9	+ 1.0	+ 0.5	7.1	+ 0.5
9	S.	I	9 38 9.50	+ 0.06	− 0.03	. .	. .	.		. .	. .	. .	. .
10	Sk.	I	9 42 47.32	+ 0.01	− 0.03	. .	. .	N.	74 29 53.7	+ 2.7	+ 2.0	. .	. .
15	E.	I	10 5 36.67	+ 0.06	− 0.02	. .	. .	.	76 36 36.1	+ 2.7	+ 1.5	8.7	+ 0.8
17	S.	I	10 14 35.27	+ 0.01	− 0.05	. .	. .	.		. .	. .	. .	. .
23	E.	I	10 41 2.15	− 0.02	− 0.04	. .	. .	.	80 15 33.4	+ 1.2	− 0.3	7.4	+ 0.1
30	E.	I	11 11 4.14	− 0.23	− 0.25	. .	. .	N.	83 39 23.1	+ 1.1	− 0.6	. .	. .
Aug. 26	Sk.	I	13 1 53.30	− 0.15	− 0.14	. .	. .	N.	97 21 42.2	+ 3.9	+ 0.4	. .	. .
Sept. 21	E.	I	14 46 43.79	− 0.17	− 0.20	. .	. .	N.	109 2 51.5	+ 3.9	+ 1.6	. .	. .
23	S.	.	14 54 47.17	+ 0.07	+ 0.04	0.97	+ 0.11	.	109 47 54.3	+ 2.0	− 0.1	11.5	− 0.4
24	Sk.	I	14 58 48.05	− 0.23	− 0.25	. .	. .	N.	110 9 48.2	+ 0.4	− 1.7	. .	. .
25	E.	I	15 2 49.15	+ 0.02	0.00	. .	. .	N.	110 31 21.5	+ 3.3	+ 1.3	. .	. .
26	F.	I	15 6 49.56	− 0.05	− 0.06	. .	. .	.	110 52 25.4	+ 2.6	+ 0.7	12.0	− 0.1
Oct. 1	S.	.	15 26 44.52	− 0.09	− 0.08	1.00	+ 0.02	.	112 31 7.8	+ 2.4	+ 0.9	14.1	+ 1.0
2	Sk.	I	15 30 42.51	− 0.17	− 0.07	. .	. .	N.	112 49 31.0	+ 4.1	+ 2.6	. .	. .
3	E.	I	15 34 37.89	− 0.06	− 0.10	. .	. .	N.	113 7 23.0	+ 3.2	+ 1.6	. .	. .
5	S.	.	15 42 27.67	− 0.05	− 0.13	1.01	− 0.01	.	113 41 40.8	+ 2.2	+ 0.6	14.2	+ 0.5
15	E.	I	16 20 13.74	− 0.12	− 0.19	. .	. .	N.	126 2 51.3	+ 2.4	+ 2.6	. .	. .
19	E.	I	16 34 21.18	+ 0.09	− 0.04	. .	. .	.	116 44 29.4	+ 0.1	− 0.3	17.9	+ 1.4
20	F.	I	16 37 45.71	+ 0.21	+ 0.06	. .	. .	.	116 53 32.7	− 0.7	− 0.9	14.5	− 2.3
23	E.	I	16 47 38.16	+ 0.27	+ 0.12	. .	. .	.	117 17 30.3	+ 0.5	+ 0.8	16.7	− 0.8
27	E.	I	16 59 50.99	− 0.03	− 0.14	. .	. .	N.	117 41 51.7	+ 2.6	+ 3.8	. .	. .
Nov. 4	E.	I	17 20 6.49	+ 0.20	− 0.04	. .	. .	.	118 4 31.3	− 6.0	− 3.4	19.7	− 1.5
7	Sk.	I	17 25 54.67	+ 0.69	+ 0.46	. .	. .	.	118 4 17.8	− 1.8	+ 1.5	22.0	− 0.2
12	E.	I	17 32 51.20	+ 0.10	− 0.10	. .	. .	.	117 52 49.5	− 5.9	− 1.8	22.8	− 1.4
14	S.	I	17 34 34.48	+ 0.43	+ 0.20	. .	. .	.	117 44 20.8	− 4.0	+ 0.1	24.0	− 1.0
24	E.	I	17 32 44.74	+ 0.18	− 0.01	. .	. .	.	116 24 38.3	− 7.4	− 0.8	28.7	− 0.3
27	Sk.	I	17 28 45.99	+ 0.28	+ 0.08	. .	. .	.	115 47 36.1	− 9.0	− 2.2	28.4	− 1.8
30	S.	I	17 23 24.62	+ 0.63	+ 0.38	. .	. .	.	115 4 23.0	− 10.0	− 3.1	29.8	− 1.2
Dec. 7	F.	I	17 7 16.41	+ 0.61	+ 0.40	. .	. .	.	113 3 22.5	− 10.7	− 2.7	29.7	− 2.6
14	F.	II	16 48 18.45	+ 0.84	+ 0.56	. .	. .	.	110 33 16.4	− 8.4	− 1.1	31.7	0.0
17	E.	II	16 42 36.07	+ 0.49	+ 0.23	. .	. .	.	109 42 14.4	− 8.9	− 1.7	30.9	− 0.2
18	F.	II	16 40 58.24	+ 0.55	+ 0.33	. .	. .	.	109 26 32.9	− 8.0	− 1.0	30.3	− 0.5
20	Sk.	II	16 38 9.45	+ 0.55	+ 0.36	. .	. .	.	108 57 27.5	− 7.0	+ 0.3	29.9	− 0.2

JUPITER.

Date.	Observer.	Limb.	Apparent Right Ascension of Center.	Corr'n to Am. Eph.	Sidereal Time of Transit of Semi-diameter.	Corr'n to Am. Eph.	Limb.	Geocentric N. P. Distance of Center.	Corr'n to Am. Eph.	Vertical Semi-diameter.	Corr'n to Am. Eph.
1874.			h. m. s.	s.	s.	s.		° ′ ″	″	″	″
Feb. 27	S.	.	11 58 57.20	+ 0.56	1.54	+ 0.06	.	88 12 19.7	+ 2.4	22.4	+ 1.5
Mar. 4	Sk.	.	11 56 47.28	+ 0.51	1.52	+ 0.03	.	87 57 31.9	+ 2.0	23.8	+ 2.8
10	F.	.	11 54 2.98	+ 0.49	1.52	+ 0.02	.	87 39 6.8	+ 2.7	22.0	+ 0.9
20	Sk.	.	11 49 19.72	+ 0.61	1.42	− 0.08	.	87 7 56.6	+ 1.7	22.1	+ 1.0
28	Sk.	.	11 45 36.30	+ 0.61	1.48	− 0.01	.	86 43 57.1	+ 3.0	21.8	+ 0.8
30	F.	.	11 44 42.26	+ 0.62	1.62	+ 0.13	.	86 38 14.2	+ 4.1	21.8	+ 0.8
April 13	Sk.	.	11 38 59.35	+ 0.70	1.44	− 0.03	.	86 2 41.6	+ 2.4	21.2	+ 0.5
29	Sk.	.	11 34 20.74	+ 0.71	1.38	− 0.05	.	85 35 39.3	+ 1.7	21.0	+ 0.7
Aug. 15	Sk.	.	12 7 46.42	+ 0.54	1.02	− 0.06	.	89 35 11.9	+ 0.8	14.5	− 0.7
26	Sk.	.	12 15 35.14	+ 0.51	0.97	− 0.09	.	90 27 11.6	+ 5.0	13.2	− 1.8

SATURN.

Aug. 27	Sk.	.	20 47 40.91	− 1.67	1.50	. .	.	108 49 46.3	+ 12.0	10.6	+ 1.9
Sept. 18	F.	.	20 43 5.66	− 1.76	0.68	+ 0.04	.	109 7 59.7	+ 9.7	8.8	+ 0.3
22	F.	.	20 42 32.22	− 1.76	0.68	+ 0.04	.	109 10 10.3	+ 11.4	8.6	+ 0.2
24	Sk.	.	20 42 17.66	− 1.79	1.46	. .	.	109 11 3.3	+ 8.9	9.8	+ 1.4
25	E.	.	20 42 10.88	− 1.86	0.68	+ 0.05	.	109 11 30.1	+ 10.2	8.4	0.0
26	F.	.	20 42 4.60	− 1.81	0.68	+ 0.05	.	109 11 54.3	+ 10.2	8.2	− 0.2
Oct. 2	Sk.	.	20 41 34.65	− 1.87	1.41	. .	.	109 13 45.6	+ 10.0	9.2	+ 0.9
3	E.	.	20 41 30.95	− 1.96	0.64	+ 0.02	.	109 13 59.1	+ 10.2	6.4	− 1.9
15	E.	.	20 41 19.53	− 1.84	0.68	+ 0.07	.	109 14 34.5	+ 10.1	7.4	− 0.7
16	F.	.		. .	. .	. .	.	109 14 26.3	+ 9.2	8.2	+ 0.1
18	Sk.	.	20 41 25.90	− 1.87	1.42	. .	.	109 14 10.2	+ 12.6	6.3	− 1.8
19	E.	.	20 41 28.85	− 1.88	0.73	+ 0.12	.	109 13 54.3	+ 8.9	8.6	+ 0.5
20	F.	.	20 41 32.32	− 1.78	0.64	+ 0.03	.	109 13 44.3	+ 12.7	7.2	− 0.9
28	F.	.		. .	. .	. .	.	109 10 56.2	+ 13.8	7.8	− 0.2
Nov. 4	E.	.	20 43 11.64	− 1.76	0.68	+ 0.09	.	109 7 14.2	+ 15.1	12.6	+ 5.7
6	S.	.	20 43 31.94	− 1.45	1.36	. .	.		. .	. .	. .
12	E.	.	20 44 40.77	− 1.82	0.62	+ 0.04	.	109 1 21.3	+ 12.0	7.8	0.0

URANUS.

Feb. 10	E.	C.	8 42 7.72	+ 1.00	. .	. .	C.	71 3 9.5	+ 14.6	. .	. .
17	E.	.	8 40 57.56	+ 0.88	0.12	− 0.01	C.	70 58 44.5	+ 12.6	. .	. .
18	F.	.	8 40 47.86	+ 0.95	0.16	+ 0.03	.	70 58 12.6	+ 16.8	1.8	− 0.1
27	S.	.	8 39 25.82	+ 1.00	0.24	+ 0.11	.	70 53 10.2	+ 16.2	3.0	+ 1.1
Mar. 2	F.	C.	8 39 0.58	+ 0.85	. .	. .	C.	70 51 40.3	+ 17.2	. .	. .
9	E.	.	8 38 7.25	+ 0.85	0.12	− 0.01	C.	70 48 29.4	+ 17.1	. .	. .
11	S.	.	8 37 53.44	+ 0.84	0.24	+ 0.11	C.	70 47 39.1	+ 15.4	. .	. .
12	S.	.	8 37 46.88	+ 0.92	0.20	+ 0.07	C.	70 47 15.2	+ 14.9	. .	. .
19	E.	.	8 37 5.48	+ 0.93	0.18	+ 0.05	C.	70 44 52.0	+ 15.0	. .	. .
20	Sk.	C.	8 37 0.23	+ 0.84	. .	. .	C.	70 44 35.6	+ 16.2	. .	. .
21	E.	.	8 36 55.36	+ 0.93	0.21	+ 0.08	C.	70 44 18.2	+ 15.7	. .	. .
24	Sk.	C.	8 36 41.53	+ 0.80	. .	. .	C.	70 43 32.1	+ 15.4	. .	. .
25	E.	.	8 36 37.44	+ 0.88	0.14	+ 0.01	C.	70 43 18.9	+ 16.0	. .	. .
26	F.	.	8 36 33.48	+ 0.88	0.24	+ 0.11	C.	70 43 6.5	+ 16.5	. .	. .
28	Sk.	C.	8 36 26.08	+ 0.79	. .	. .	C.	70 42 42.5	+ 16.0	. .	. .
29	E.	.	8 36 22.81	+ 0.86	0.14	+ 0.01	C.	70 42 31.8	+ 15.9	. .	. .
30	F.	.		. .	. .	. .	C.	70 42 23.6	+ 17.5	. .	. .
April 13	Sk.	C.	8 35 58.42	+ 0.89	. .	. .	C.	70 41 28.3	+ 15.2	. .	. .
Dec. 11	F.	C.	9 10 56.61	+ 1.24	. .	. .	C.	73 0 47.2	+ 18.4	. .	. .
15	F.	C.	9 10 36.37	+ 0.88	. .	. .	C.	72 59 9.3	+ 16.4	. .	. .

NEPTUNE.

Date.	Observer.	Limb	Apparent Right Ascension of Center.	Corr'n to Am. Eph.	Sidereal Time of Transit of Semi-diameter.	Corr'n to Am. Eph.	Limb.	Geocentric N. P. Distance of Center.	Corr'n to Am. Eph.	Vertical Semi-diameter.	Corr'n to Am. Eph.
1874.			h. m. s.	s.	s.	s.		° ′ ″	″	″	″
Oct. 12	F.	.	1 52 58.12	+ 0.06	. .	. .	.	80 19 37.8	+ 0.1	. .	. .
19	E.	.	1 52 13.97	+ 0.10	. .	. .	.	80 23 46.4	− 0.5	. .	. .
23	E.	.	1 51 48.50	+ 0.11	. .	. .	.	80 26 7.8	− 1.2	. .	. .
25	E.	.	1 51 35.77	+ 0.11	. .	. .	.	80 27 18.2	− 1.5	. .	. .
26	Sk.	.	1 51 29.46	+ 0.16	. .	. .	.	80 27 54.9	0.0	. .	. .
29	E.	.	1 51 10.44	+ 0.17	. .	. .	.	80 29 38.3	− 1.4	. .	. .
Nov. 3	Sk.	.	1 50 39.08	+ 0.13	. .	. .	.	80 32 29.7	− 1.6	. .	. .
4	E.	.	1 50 32.86	+ 0.09	. .	. .	.	80 33 3.5	− 1.5	. .	. .
6	S.	.	1 50 20.59	+ 0.10	. .	. .	.	80 34 9.0	− 2.6	. .	. .
7	Sk.	.	1 50 14.64	+ 0.24	. .	. .	.	80 34 43.4	− 1.1	. .	. .
12	E.	.	1 49 44.63	+ 0.02	. .	. .	.	80 37 23.7	− 0.8	. .	. .
13	F.	.	1 49 38.85	+ 0.05	. .	. .	.	80 37 56.3	+ 0.7	. .	. .
21	F.	.	1 48 54.49	+ 0.02	. .	. .	.	80 41 50.8	+ 0.8	. .	. .
25	F.	.		. .	. .	. .	.	80 43 36.9	+ 0.5	. .	. .
28	E.	.		. .	. .	. .	.	80 44 51.6	− 0.2	. .	. .
Dec. 1	Sk.	.	1 48 5.82	+ 0.19	. .	. .	.	80 46 1.9	+ 1.0	. .	. .
2	E.	.	1 48 1.24	+ 0.02	. .	. .	.	80 46 24.4	+ 1.3	. .	. .
4	F.	.	1 47 52.74	+ 0.05	. .	. .	.	80 47 4.6	− 1.0	. .	. .
5	Sk.	.	1 47 48.50	− 0.06	. .	. .	.	80 47 25.3	− 0.7	. .	. .
14	E.	.	1 47 16.14	+ 0.06	. .	. .	.	80 50 0.6	− 1.1	. .	. .
18	E.	.	1 47 4.65	− 0.04	. .	. .	.	80 50 55.4	+ 1.6	. .	. .
19	F.	.	1 47 1.92	+ 0.01	. .	. .	.	80 51 6.4	+ 1.3	. .	. .
21	Sk.	.	1 46 57.13	+ 0.06	. .	. .	.	80 51 24.3	− 1.2	. .	. .
22	E.	.	1 47 54.88	+ 0.04	. .	. .	.	80 51 36.3	+ 1.7	. .	. .

SMALL PLANETS.

The observations of ① to ⑤ inclusive have been compared with the ephemerides of the British Nautical Almanac. The remainder have been compared with the ephemerides of the Berlin Jahrbuch.

Date.	Observer.	Washington Mean Time.	Berlin Mean Time corrected for Aberration.	Apparent Right Ascension of Center.	Corr'n to Ephem.	Geocentric N. P. Distance of Center.	Corr'n to Ephem.	NOTES.
CERES, ①.								
1874.		h. m.	h. m.	h. m. s.	s.	° ′ ″	″	
Dec. 11	F.	. . .	. .	6 49 16.63	+ 8.43	63 22 13.7	− 15.1	
14	E.	. . .	. .	6 46 41.42	+ 8.46	63 5 41.7	− 14.1	
15	F.	. . .	. .	6 45 47.27	+ 8.43	63 0 11.4	− 15.3	
18	E.	. . .	. .	6 42 58.81	+ 8.65	62 43 51.3	− 15.1	
23	F.	. . .	. .	6 38 0.65	+ 8.58	63 17 23.2	− 16.7	
PALLAS, ②.								
Nov. 3	Sk.	. . .	. .	3 0 8.87	− 1.23	115 29 32.9	− 3.4	
7	Sk.	. . .	. .		. .	116 15 55.4	− 1.5	
12	E.	. . .	. .	2 52 36.27	− 1.55	117 4 9.4	− 3.2	
13	F.	. . .	. .	2 51 46.61	− 1.16	117 12 28.9	− 2.8	
21	F.	. . .	. .		. .	118 2 45.4	− 3.8	
25	F.	. . .	. .		. .	118 17 9.0	− 4.7	
Dec. 2	E.	. . .	. .	2 38 4.76	− 1.47		. .	
4	F.	. . .	. .	2 37 0.91	− 1.18	118 24 39.3	− 5.1	
14	E.	. . .	. .	2 33 12.38	− 1.36	117 56 20.6	− 5.6	
18	E.	. . .	. .	2 32 26.68	− 1.26	117 35 47.2	− 5.4	
19	F.	. . .	. .	2 32 19.30	− 1.43	117 30 5.8	+ 11.3	Probably 1 revolution=15″.3 in error.
21	Sk.	. . .	. .	2 32 10.46	− 0.93	117 17 11.3	− 6.4	
22	E.	. . .	. .	2 32 7.91	− 1.36	117 10 31.6	− 3.8	
JUNO, ③.								
Nov. 16	E.	. . .	. .	2 55 49.96	+ 8.25	95 14 34.2	− 14.6	
21	F.	. . .	. .		. .	95 37 28.8	− 16.6	
25	F.	. . .	. .	2 50 30.33	+ 8.03		. .	
Dec. 2	E.	. . .	. .	2 47 30.41	+ 7.83		. .	
4	F.	. . .	. .	2 46 52.63	+ 7.50	95 51 34.7	− 10.3	
5	Sk.	. . .	. .	2 46 36.25	+ 7.39	95 49 56.0	− 15.4	
14	E.	. . .	. .	2 45 29.31	+ 7.00	95 20 44.6	− 9.4	
18	E.	. . .	. .	2 45 47.53	+ 6.81	94 59 46.9	− 8.1	
19	F.	. . .	. .	2 46 56.49	+ 6.51	94 53 51.3	− 8.5	
21	Sk.	. . .	. .	2 46 20.72	+ 6.67	94 41 15.0	− 9.4	
VESTA, ④.								
Nov. 21	F.	. . .	. .	4 30 19.11	+ 0.33	75 25 39.4	− 1.6	
25	F.	. . .	. .	4 26 2.49	+ 0.22	75 28 2.0	− 1.1	
Dec. 4	F.	. . .	. .	4 16 18.84	+ 0.28	75 30 15.0	− 1.0	
5	Sk.	. . .	. .	4 15 15.30	+ 0.36	75 30 10.1	− 2.0	
14	E.	. . .	. .	4 6 15.70	+ 0.38	75 26 15.3	− 2.5	
18	E.	. . .	. .	4 2 43.01	+ 0.46	75 22 26.7	− 0.3	
19	F.	. . .	. .	4 1 52.90	+ 0.23	75 21 15.4	− 0.9	
22	E.	. . .	. .	3 59 31.80	+ 0.34	75 17 14.0	+ 0.4	

ASTRÆA, (5).

Date.	Obs.	Washington Mean Time.	Berlin Mean Time corrected for Aberration.	Apparent Right Ascension of Center.	Corr'n to Ephem.	Geocentric N. P. Distance of Center.	Corr'n to Ephem.	NOTES.
1874.		h. m.	h. m.	h. m. s.	s.	° ′ ″	″	
Nov. 21	F.	. . .	. . .	5 3 45.09	− 10.22		. .	
Dec. 14	E.	. . .	. . .		. .	76 14 48.8	− 95.0	Probably 2′ in error.
18	E.	. . .	. . .	4 37 44.50	− 10.23	76 15 38.9	+ 25.6	
22	E.	. . .	. . .	4 34 14.33	− 10.29	76 12 38.2	+ 26.4	

METIS, (9).

June 1	E.	11 13.8	5 47.9	15 55 38.88	− 0.29	109 47 59.3	− 0.7	

HYGEIA, (10).

Nov. 7	Sk.	11 46.7	17 27.8		. .	68 31 0.1	− 124.3	
12	E.	11 22.8	17 3.9	2 51 17.23	− 11.17	68 50 31.6	− 126.8	
13	F.	11 18.0	16 59.1	2 50 29.75	− 10.90	68 54 35.7	− 124.2	
16	E.	11 1.9	16 42.9	2 48 8.39	− 11.17	69 6 46.8	− 125.0	
21	F.	10 40.6	16 21.5		. .	69 27 19.5	− 127.6	
27	F.	10 12.9	15 53.5		. .	69 51 52.2	− 126.9	

PARTHENOPE, (11).

Oct. 15	E.	11 51.0	17 41.7	1 29 6.86	+ 4.66	89 5 53.8	− 20.8	
16	E.	11 47.1	17 37.8	1 29 12.64	+ 4.65	89 11 29.4	− 19.2	
19	E.	11 31.6	17 22.2	1 25 31.43	+ 4.49	89 27 26.2	− 18.4	
20	E.	11 26.8	17 17.4	1 24 38.35	+ 4.39	89 32 29.2	− 17.8	
22	Sk.	11 17.2	17 7.8	1 22 53.87	+ 4.53	89 42 5.3	− 20.0	

LUTETIA, (21).

June 1	E.	12 10.3	18 1.6	16 52 16.27	− 3.72	111 49 14.5	− 3.6	
13	E.	11 10.6	17 2.0	16 39 49.45	− 3.36	111 47 49.9	− 4.0	
17	E.	10 51.0	16 42.4	16 35 53.59	− 3.37	111 47 10.2	− 5.7	

PROSERPINE, (26).

Feb. 10	E.	11 45.9	17 33.7	9 10 15.40	− 2.30	67 44 12.2	− 7.6	
17	E.	11 11.9	16 59.7	9 3 43.24	− 1.46	67 20 37.6	− 5.0	

AMPHITRITE, (29).

Feb. 11	S.	12 55.1	18 43.9	10 23 35.70	− 0.77	74 57 28.1	− 2.3	

POLYHYMNIA, (35).

Dec. 15	F.	13 51.1	19 35.2	7 30 6.11	+ 1.06	65 21 23.0	− 6.5	

FIDES, (37).

Feb. 10	E.	11 58.8	17 48.5	9 23 37.32	− 6.55	70 32 41.4	− 30.8	
18	F.	11 20.3	17 9.8	9 16 4.78	− 6.76	70 10 11.6	− 28.9	

DAPHNE, (41).

Date.	Observer.	Washington Mean Time.	Berlin Mean Time corrected for Aberration.	Apparent Right Ascension of Center.	Corr'n to Ephem.	Geocentric N. P. Distance of Center.	Corr'n to Ephem.	NOTES.
1874.		h. m.	h. m.	h. m. s.	s.	° ′ ″	″	
Jan. 16	E.	11 26.8	17 13.1	7 12 31.09	+ 3.23	90 13 16.4	+ 2.6	
28	E.	10 29.3	16 15.5	7 2 14.47	+ 3.38	89 8 18.4	− 0.6	

PALES, (49).

Dec. 14	E.	12 49.8	18 38.1	6 24 44.71	+ 2.49	64 54 35.6	+ 11.0	
15	F.	12 45.0	18 33.3	6 23 48.52	+ 2.57	64 59 9.3	+ 11.3	
18	E.	12 30.1	18 18.4	6 20 56.86	+ 2.54	65 1 6.8	+ 13.0	

MELETE, (56).

Nov. 4	E.	10 40.1	16 28.9	1 37 6.28	+ 14.62	84 5 13.0	− 49.4	
6	S.	10 31.0	16 19.7	1 35 42.35	+ 14.38	84 18 11.6	− 49.8	
7	Sk.	10 26.2	16 14.8		. .	84 24 28.6	− 46.7	

ELPIS, (59).

Dec. 14	E.	12 11.9	18 0.3	5 46 41.45	+ 0.76	80 27 14.4	+ 0.6	
15	F.	12 7.0	17 55.6	5 45 44.89	+ 0.80	80 27 19.5	− 0.3	
18	E.	11 22.4	17 21.0	5 42 55.03	+ 0.94	80 26 48.5	+ 0.6	

ANGELINA, (64).

Feb. 11	S.	12 59.6	18 49.8	10 28 6.71	+ 0.02	81 11 32.2	− 2.1	

LETO, (68).

Feb. 18	F.	12 17.0	18 29.6	10 43 7.83	+ 1.44	70 14 57.8	+ 21.8	

FERONIA, (72).

Jan. 16	E.	11 52.2	17 41.1	7 17 56.38	− 4.10	76 34 39.7	− 6.2	

DIANA, (78).

Nov. 3	Sk.	11 59.6	17 49.6	2 52 40.92	+ 4.77	58 49 56.2	− 32.3	
6	S.	11 44.5	17 34.6	2 49 24.07	+ 4.76	58 55 36.1	− 30.6	
12	E.	11 14.4	17 4.6	2 42 47.33	+ 4.72	59 12 43.1	− 26.8	
14	S.	11 4.3	16 54.6	2 40 37.08	+ 4.85	59 19 55.4	− 31.8	
16	E.	10 54.3	16 44.6	2 38 29.22	+ 5.04	59 27 56.2	− 28.1	
25	F.	10 10.1	16 0.3	2 29 39.88	+ 4.70	60 10 51.8	− 26.5	
28	E.	9 55.8	15 45.9	2 27 7.14	+ 4.75	60 26 57.5	− 29.1	

TERPSICHORE, (81).

Nov. 16	E.	12 36.8	18 27.7	4 21 15.63	− 20.65	56 18 0.6	− 29.6	
Dec. 4	F.	11 7.4	16 58.3	4 2 35.54	− 20.79	56 22 2.3	− 21.0	
5	Sk.	11 2.5	16 53.4	4 1 36.08	− 20.74	56 24 11.7	− 9.1	
7	F.	10 52.7	16 43.6	3 59 39.88	− 20.90	56 28 29.5	− 13.8	
8	S.	10 47.8	16 38.6	3 58 43.52	− 20.95	56 30 57.5	− 9.7	
9	Sk.	10 42.9	16 33.7	3 57 48.69	− 20.73	56 33 34.4	− 4.7	

IO, (85).

Date.	Observer.	Washington Mean Time.	Berlin Mean Time corrected for Aberration.	Apparent Right Ascension of Center.	Corr'n to Ephem.	Geocentric N. P. Distance of Center.	Corr'n to Ephem.	NOTES.
1874.		h. m.	h. m.	h. m. s.	s.	° ′ ″	″	
Nov. 13	E.	12 45.2	18 33.3	4 17 56.56	+ 23.56	79 55 53.0	− 11.1	
16	E.	12 30.7	18 18.8	4 15 13.38	+ 23.75	80 15 55.3	− 16.7	
21	F.	12 6.5	17 54.5	4 10 34 71	+ 23.90	80 47 30.8	− 20.0	
Dec. 4	F.	11 3.6	16 54.5	3 58 45.05	+ 23.46	81 55 3.0	− 13.4	
8	S.	10 44.5	16 32.0	3 55 26.70	+ 22.89	82 10 27.0	− 17.6	
9	Sk.	10 39.8	16 27.2	3 54 39.77	+ 23.07	82 13 57.7	− 13.4	

MINERVA, (93).

Jan. 16	E.	11 55.4	17 39.4	7 41 9.66	− 2.89	56 28 54.1	+ 14.0	
24	E.	11 15.7	16 59.5		. .	56 23 17 0	+ 15.1	

MIRIAM, (102).

Jan. 16	E.	11 39.5	17 25.9	7 25 9.04	+ 39.33	75 41 47.8	− 70.1	Doubtful.
24	E.	11 0.0	16 46.1	7 17 9.27	+ 1.66	75 21 15.8	− 95.8	Doubtful.

THYRA, (115).

June 1	E.	11 4.6	16 51.4	15 46 24.93	− 16.35	126 25 45.0	− 49.4	Doubtful.

VALA, (131).

Nov. 4	E.	10 46.5	16 35.1	1 43 30.55	− 31.21	83 32 0.5	− 40.4	Doubtful.
7	Sk.	10 32.0	16 20.6	1 40 31.70	− 51.66	83 40 10.3	− 14.5	Doubtful.

COGGIA'S COMET, S. P.

Date.	Observer.	Apparent Right Ascension.	Apparent N. P. Distance.
		h. m. s.	° ′ ″
June 24	Sk.	7 26 3.44	337 39 9.4
28	F.	7 32 32.32	336 17 43.0
29	E.	7 34 1.17	335 49 32.5
July 5	E.	7 41 27.58	331 19 27.0
6	Sk.	7 42 26.34	330 11 16.6
7	E.	7 43 20.83	328 54 29.9

DECLINATIONS OF THE MOON

FROM

OBSERVATIONS WITH THE MURAL CIRCLE.

Date.	Mean Time of Transit of Center.	Observer.	Limb.	Apparent Right Ascension of Center.	Correction to Tables of—		Observer.	Limb.	Geocentric Declination of Center.	Correction to Tables of—	
					Peirce.	Hansen.				Peirce.	Hansen.
1874.	h. m.			h. m. s.	s.	s.			° ′ ″	″	″
Jan. 24	5 51.28	.	.		. .	.	Y.	S.	+ 12 15 31.8	— 5.0	— 7.1
Feb. 26	9 11.84	.	.		. .	. .	Y.	N.	+ 26 28 5.3	+ 4.2	+ 3.8
Mar. 25	7 7.00	.	.		. .	. .	Y.	N.	+ 27 9 51.9	+ 4.9	+ 4.4
Sept. 22	9 33.57	.	.		. .	. .	Y.	S.	— 18 58 17.0	— 4.4	— 2.6
23	10 26.78	.	.		. .	. .	Y.	S.	— 13 0 51.0	— 3.0	— 3.1
24	11 18.53	.	.		. .	. .	Y.	S.	— 6 7 51.3	— 1.1	— 3.8
Oct. 20	8 12.72	.	.		. .	. .	Y.	S.	— 16 8 12.9	— 6.6	— 5.4
21	9 3.58	.	.		. .	. .	Y.	S.	— 9 49 52.1	— 4.8	— 3.6
23	10 44.95	.	.		. .	. .	Y.	S.	+ 4 35 49.6	— 6.8	— 8.1
Nov. 21	10 14.63	.	.		. .	. .	Y.	S.	+ 14 53 10.2	— 5.0	— 6.5
Dec. 18	8 2.09	.	.		. .	. .	Y.	S.	+ 12 2 11.7	— 1.5	— 7.0
19	8 55.45	.	.		. .	. .	Y.	S.	+ 18 10 30.9	— 3.2	— 7.1

LIST

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DURING

THE YEAR 1874.

LIST

OF

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METEOROLOGICAL OBSERVATIONS

MADE AT THE

UNITED STATES NAVAL OBSERVATORY

DURING

THE YEAR 1874.

INTRODUCTION.

The meteorological department, during 1874, was under the charge of Prof. J. R. Eastman, U. S. N., who made a daily examination of all the records and a monthly inspection of all the instruments in use. The observations were made at 0^h, 3^h, 6^h, 9^h, 12^h, 15^h, 18^h, and 21^h, Washington civil time, by the Observatory watchmen, Messrs. T. Hays, D. Horrigan, and N. Cahill, who have acquired such a degree of skill as insures a reasonable accuracy in their work.

METEOROLOGICAL INSTRUMENTS.

Standard Barometer.—This barometer was made by James Green, of New York, and is only used as a standard by which the Newman barometer is occasionally tested. Drawings and a description of this instrument will be found in the volume of Washington Observations for 1862.

Newman Barometer.—The barometer in daily use was made by Newman, and is mounted against the northern wall of the northwest room on the first floor of the Observatory. The barometer is mounted with the usual adjustments at the top and bottom, and is attached by heavy brackets to a substantial mahogany board, which is firmly secured to the wall. The cistern is 103 feet above the mean half-tide of the Potomac River. The cistern and tube are of glass; the internal diameter of the former being 3.0 inches, and of the latter 0.532 inch.

The scale is attached to a brass rod having the usual adjustment to the surface of the mercury in the cistern. It is silvered and divided to 0.05 inch, and, by means of a vernier, may be read to 0.002 inch. The temperature of the mercury in the cistern is determined by a small ivory-scale thermometer, the bulb of which is constantly immersed in the mercury. The observations with this instrument in 1874, as printed in this volume, have received the constant correction of +0.005 inch, determined in 1864, and have also been reduced to 32°.0 Fahrenheit.

Dry-Bulb Thermometer.—This is a mercurial thermometer by Green, with a bulb 1.5 inches long and 0.2 inch in diameter. The scale is of glass, 12.0 inches long, 0.8 inch wide, and 0.1 inch thick. It is divided to half-degrees from −30°.0 to +125°.0 Fahrenheit. Several independent tests, in the spring of 1868, indicated that the *freezing-point* had changed its position on the scale since 1863.

In 1871, the dry-bulb, the maximum, and the minimum thermometers were compared with the Kew standard thermometer, No. 462, belonging to Professor Eastman. No appreciable errors were detected in the maximum and minimum thermometers. A

correction of —0°.9 was deduced for the dry-bulb thermometer; and each observation published in this volume has been corrected by this quantity.

Wet-Bulb Thermometer.—This instrument is similar to the preceding in materials, construction, and dimensions. Its scale extends from —35°.0 to +115°.0 Fahrenheit. The bulb is covered with soft, fine linen, kept moist by the capillary action of a bundle of fine linen fibers that communicate with water in a bird-glass placed close beside it. The linen on the bulb is changed before its free action is impaired by dust.

Maximum Thermometer.—This is a mercurial thermometer, with a bulb 1.5 inches long and 0.2 inch in diameter. The scale is of glass, 12.0 inches long, 0.8 inch wide, and 0.1 inch thick, and is graduated to half-degrees from —50°.0 to +120°.0 Fahrenheit. At a point a short distance above the bulb, the internal diameter of the tube is so reduced that, while with the increase of temperature the mercury passes freely, with the least decrease of temperature the column of mercury is broken at the point of contraction, if the instrument is nearly horizontal, and the top of the column marks the highest temperature.

The top of the scale is attached by a metallic clamp to a pivot, around which the thermometer revolves freely in a vertical plane. This pivot is secured to a walnut board fixed to a post, about three feet above the ground; and the thermometer is placed nearly horizontal by resting the scale near the bulb on a wooden pin in the board.

After each observation, the instrument is adjusted by removing the pin and allowing the thermometer to swing freely from the pivot at the top of the scale, which motion is generally sufficient to re-unite the column of mercury. In 1873, it was found that the readings from this thermometer required a correction of +0°.5, which has been applied to the observations of 1874.

Minimum Thermometer.—This is a transparent spirit-thermometer, with a spherical bulb about 0.5 inch in diameter. The scale is of silvered brass, 12 inches long, 1.0 inch wide, and 0.06 inch thick, and is graduated to degrees from —67°.0 to +131°.0 Fahrenheit. The registering index is a short, fine steel wire, inclosed in a delicate blue-glass cylinder, with a small knob at the extremity farthest from the bulb of the thermometer.

This cylinder is drawn toward the bulb by the decrease of temperature; but when the temperature increases, the spirit flows through and around the cylinder, which remains at rest at the lowest point reached by the liquid. The end of the knob on the cylinder indicates the lowest point reached by the column of liquid. After each observation, the index is moved to the top of the column by means of a small magnet.

Solar Thermometer.—This thermometer (No. 13583) was made by L. Casella, of London, and consists of a blackened spherical bulb and its tube, inclosed within a bulb and cylinder of glass of the same form as the thermometer, but of about three times the diameter. The air has been exhausted from the inclosing bulb and cylinder, and the thermometer is confined in the center of the cylinder by having its upper end sealed to the end of the cylinder, while the lower end is fixed in a cork collar just above the junction of the bulb and cylinder. The scale is engraved on the thermometer-tube to degrees, and has a range from —10°.0 to +215°.0 Fahrenheit.

At about 20° from the top of the column of mercury, a small portion of air (covering about 0°.5 on the scale) is introduced into the column, so that whenever the

temperature diminishes, the column of mercury above the air remains in position, indicating the highest temperature subsequent to the last observation. After each observation, the instrument is adjusted by holding it in a vertical position, tapping it gently, if necessary, until the upper portion forces the air down to the main column.

This thermometer rests in a horizontal position, in metallic crutches, 3 inches high, which are attached to an inch board 16 inches long and 5 inches wide. The board is painted green, and placed on the grass about three yards west of the Meteorological Observatory.

METEOROLOGICAL OBSERVATORY.

In 1862, a small building for the special protection of thermometers was erected about four yards southwest of the southwest corner of the south wing of the Observatory. It is constructed of wood, and painted white throughout.

Its form is octagonal, each side being 2.4 feet wide and 6.3 feet high to the eaves. The roof is of tin, unpainted on the under side. The ceiling is of thick boards, tightly fitted together, and between it and the roof there is an open space freely communicating with the open air.

On the north side is the door, which, as well as the sides, is of double louver-work, with a space of three inches between the two divisions. The sides terminate one foot from the ground, and, as the building is situated on a grass-plat, under ordinary circumstances the instrument should indicate the true temperature. This building was moved on April 9 to a point 18.8 yards west of the south wing of the main building and 17.3 yards south of the Transit Circle room.

The dry-, wet-bulb, maximum, and minimum thermometers are in the Meteorological Observatory, and are all supported by means of arms and brackets to an upright metallic shaft, which is firmly secured to the ground in the center of the building.

The bulb of the minimum thermometer is 5.8 feet, those of the dry- and the wet-bulb thermometers are 4.2 feet, and that of the maximum thermometer is 3.2 feet above the ground.

A standard thermometer (Troughton and Simms, No. 1) is suspended between the dry- and the wet-bulb thermometers, and is frequently used as a check on the other instruments.

From frequent comparisons, it has been ascertained that the errors of the minimum and wet-bulb thermometers are not appreciable, and therefore the published observations with these instruments are the unmodified copies of the original records.

The maximum and minimum thermometers were read at the end (midnight) of each day.

DIRECTION AND FORCE OF THE WIND.

An ordinary wind-vane revolves freely on a spindle at the top of the time-ball staff, and the direction of the wind is estimated from the known azimuths of the lines of the main building of the Observatory. The velocity of the wind is recorded in numerals, of which 0 indicates a calm, 1 a very slight breeze, and so on up to 10, which would indicate a violent hurricane.

These recorded numbers are only estimates, and at best are but approximative.

CLOUDS.

In the description of the prevailing forms of clouds, the nomenclature of Howard is used: C., K., S., N., being the symbols for the forms designated *cirrus*, *cumulus*, *stratus*, *nimbus*; and the letters C. S., C. K., &c., indicate the combination *cirro-stratus*, *cirro-cumulus*, &c. The portion of sky obscured is determined by estimation after a careful scrutiny of the clouds or sky. A clear sky is denoted by 0, and a total obscuration by 10.

RAIN-GAUGE.

This instrument is placed within the inclosure for the protection of the solar thermometer. It consists of a cylinder 0.8 inch long and 4.1 inches in diameter, soldered to an inverted cone, which is loaded with lead on the outside and near the apex.

The cone rests in an aperture in the horizontal top of an oblong box, and this, aided by the weight of the lead, prevents any disturbance, even during high winds. The top of the gauge is 2.0 feet above the ground, and is free from all shelter, even in driving rain-storms.

At the apex of the cone is a small aperture, through which the water passes to a receiving-bottle in the box.

The rain is measured in a glass cylinder, with an internal diameter of 0.60 inch, so graduated that the depth of rain can be determined to within 0.002 inch.

The gauge is examined every day, and, as the apex of the cone closes the mouth of the bottle except through the small aperture, there is little or no loss by evaporation.

Each inch of snow is assumed to be equal to 0.111 inch of rain; but, whenever practicable, the snow has been melted, and measured in the graduated cylinder.

OBSERVATIONS.

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.	in.	in.	in.	in.	in.	in.	in.	in.
January 1	30.396	30.269	30.256	30.282	30.265	30.221	30.221	30.227
2	30.211	30.191	30.183	30.203	30.177	30.156	30.186	30.203
3	30.199	30.194	30.208	30.232	30.175	30.130	30.136	30.147
4	30.147	30.134	30.122	30.148	30.094	30.037	30.053	30.050
5	30.068	30.088	30.130	30.227	30.245	30.268	30.331	30.347
6	30.340	30.275	30.238	30.230	30.108	30.011	29.959	29.858
7	29.791	29.713	29.595	29.647	29.565	29.503	29.513	29.545
8	29.492	29.483	29.515	29.588	29.629	29.687	29.770	29.830
9	29.822	29.826	29.796	29.795	29.698	29.601	29.585	29 541
10	29.563	29.597	29.605	29.641	29.614	29.619	29.639	29.689
11	29.685	29.739	29.792	29.849	29.873	29.898	29.971	30.046
12	30.096	30.149	30.230	30.294	30.295	30.286	30.325	30.373
13	30.374	30.382	30.370	30.389	30.323	30.251	30.180	30.068
14	29.968	29.881	29.814	29.862	29.845	29.849	29.927	29.962
15	29.973	29.994	30.012	30.025	30.003	29.967	30.009	30.024
16	30.024	30.039	30.065	30.158	30.172	30.190	30.232	30.283
17	30.328	30.336	30.403	30.502	30.481	30.452	30.452	30.474
18	30.489	30.492	30.476	30.499	30.475	30.395	30.360	30.295
19	30.273	30.185	30.145	30.083	29.986	29.886	29 889	29.889
20	29.940	30.009	30.116	30.233	30.281	30.301	30.371	30.393
21	30.412	30.374	30.375	30.369	30.294	30.210	30.195	30.176
22	30.147	30.099	30.073	30.064	30.010	29.924	29.888	29.829
23	29.808	29.794	29.748	29.747	29.750	29.824	30.055	30.255
24	30.281	30.318	30.320	30.344	30.259	30.208	30.301	30.407
25	30.435	30.459	30.518	30.556	30.536	30.529	30.566	30.610
26	30.606	30.605	30.603	30.609	30.545	30.339	30.313	30.212
27	30.179	30.144	30.112	30.097	30.066	29.975	29.914	29.836
28	29.811	29.701	29.649	29.646	29.640	29.695	29.844	29.963
29	30.039	30.106	30.135	30.216	30.199	30.115	30.099	30.098
30	30.106	30.141	30.174	30.252	30.291	30.262	30.270	30.282
31	30.269	30.213	30.167	30.202	30.182	30.170	30.234	30.292
Hourly means.	30.106	30.095	30.094	30.129	30.099	30.063	30.090	30.103

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.	in.	in.	in.	in.	in.	in.	in.	in.
February 1	30.360	30.365	30.392	30.449	30.476	30.465	30.492	30.501
2	30.506	30.480	30.453	30.461	30.394	30.287	30.247	30.169
3	30.077	29.973	29.883	29.910	29.868	29.853	29.913	29.942
4	29.994	30.033	30.086	30.192	30.160	30.191	30.254	30.305
5	30.320	30.341	30.377	30.427	30.423	30.391	30.433	30.441
6	30.447	30.403	30.383	30.358	30.272	30.147	30.031	29.964
7	29.841	29.804	29.810	29.858	29.897	29.910	30.030	30.098
8	30.176	30.215	30.289	30.346	30.362	30.296	30.317	30.308
9	30.242	30.165	30.121	30.096	30.026	29.952	29.915	29.921
10	29.866	29.902	29.912	29.960	29.948	29.874	29.809	29.796
11	29.793	29.816	29.836	29.866	29.843	29.799	29.842	29.857
12	29.910	29.956	29.984	30.033	30.034	29.999	29.996	30.008
13	29.968	29.944	29.904	29.938	29.887	29.821	29.764	29.699
14	29.688	29.678	29.919	30.081	30.108	30.127	30.172	30.192
15	30.186	30.151	30.137	30.114	30.044	29.932	29.914	29.894
16	29.810	29.741	29.690	29.675	29.645	29.610	29.692	29.779
17	29.846	29 899	29.988	30.041	30.059	30.028	30.037	30.106
18	30.124	30.143	30.169	30.239	30.253	30.217	30.240	30.246
19	30.268	30.247	30.243	30.253	30.191	30.112	30.055	30.043
20	29.949	29.941	29.923	29.944	29.960	29.950	29.989	30.020
21	30.020	29.984	29.967	29.989	29.935	29.856	29.893	29.932
22	29.969	29.952	30.005	30.040	30.005	29.950	29.970	29.980
23	29.938	29.878	29.845	29.840	29.769	29.733	29.833	29.949
24	30.032	30.191	30.311	30.446	30.470	30.458	30.473	30.479
25	30.433	30.363	30.306	30.199	30.119	29.953	29.935	29.968
26	30.021	30.158	30.339	30.352	30.358	30.249	30.199	30.155
27	30.085	30.064	30.066	30.131	30.116	30.139	30.197	30.225
28	30.233	30.209	30.232	30.220	30.245	30.166	30.158	30.158
Hourly means.	30.075	30.071	30.093	30.124	30.103	30.052	30.064	30.076

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.	in.	in.	in.	in.	in.	in.	in.	in.
March 1	30.128	30.109	30.102	30.114	30.104	30.014	30.008	30.014
2	30.015	30.018	30.018	30.064	30.057	29.998	30.005	30.029
3	30.017	29.996	29.993	29.978	29.963	29.850	29.775	29.793
4	29.625	29.593	29.513	29.506	29.490	29.528	29.724	29.894
5	29.980	30.034	30.150	30.234	30.222	30.230	30.254	30.274
6	30.288	30.245	30.261	30.285	30.217	30.121	30.089	30.011
7	29.956	29.836	29.748	29.724	29.628	29.585	29.599	29.669
8	29.703	29.679	29.694	29.703	29.654	29.631	29.690	29.719
9	29.745	29.732	29.767	29.798	29.754	29.734	29.732	29.734
10	29.689	29.671	29.681	29.653	29.589	29.553	29.563	29.606
11	29.607	29.633	29.679	29.710	29.676	29.645	29.660	29.699
12	29.692	29.660	29.667	29.653	29.584	29.551	29.626	29.692
13	29.701	29.714	29.765	29.807	29.809	29.801	29.884	29.954
14	29.981	30.021	30.088	30.144	30.150	30.131	30.172	30.230
15	30.236	30.272	30.302	30.346	30.295	30.250	30.249	30.278
16	30.253	30.261	30.285	30.313	30.290	30.243	30.207	30.191
17	30.157	30.093	30.079	30.086	30.084	30.040	30.046	30.085
18	30.076	30.066	30.052	30.068	30.040	29.912	29.922	29.893
19	29.850	29.788	29.746	29.716	29.613	29.549	29.578	29.647
20	29.692	29.768	29.827	29.943	29.907	29.912	29.936	30.000
21	29.994	29.996	30 034	30.074	30.027	29.936	29.904	29.880
22	29.787	29.754	29.723	29.759	29.812	29.801	29.811	29.812
23	29.807	29.785	29.867	29.989	30.029	30.033	30.061	30.162
24	30.211	30.259	30.307	30.384	30.378	30.312	30.327	30.331
25	30.337	30.329	30.317	30.329	30.250	30.131	30.072	30.039
26	29.985	29.949	29.943	29.920	29.831	29.724	29.728	29.789
27	29.810	29.892	29.958	30.061	30.072	29.941	29.905	29.896
28	29.850	29.876	29.908	30.011	30.012	29.951	29.976	30.041
29	30.059	30.064	30.112	30.174	30.152	30.064	30.040	30.080
30	30.086	30.073	30.054	30.046	29.983	29.860	29.868	29.924
31	29.925	29.926	29.926	29.960	29.925	29.907	29.907	29.998
Hourly means.	29.913	29.938	29.954	29.986	29.955	29.902	29.910	29.947

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.	in.	in.	in.	in.	in.	in.	in.	in.
April 1	30.024	30.044	30.070	30.111	30.088	30.022	30.024	30.029
2	29.996	29.976	29.986	30.025	29.992	29.908	29.865	29.863
3	29.849	29.854	29.859	29.902	29.772	29.819	29.799	29.810
4	29.778	29.730	29.702	29.829	29.931	30.040	30.115	30.182
5	30.243	30.275	30.320	30.323	30.251	30.086	30.007	29.944
6	29.849	29.796	29.806	29.856	29.881	29.873	29.924	29.942
7	29.886	29.802	29.816	29.835	29.837	29.817	29.871	29.941
8	29.967	29.943	29.954	29.977	29.907	29.784	29.782	29.754
9	29.736	29.754	29.779	29.876	29.857	29.829	29.782	29.726
10	29.518	29.530	29 500	29.700	29.695	29.777	29.878	29.979
11	30.030	30.041	30.052	30.061	29.984	29.876	29.854	30.085
12	30.210	30.322	30.400	30.459	30.441	30.403	30.409	30.454
13	30.497	30.501	30.530	30.552	30.478	30.392	30.347	30.348
14	30.320	30.262	30.250	30.216	30.170	30.096	30.067	30.054
15	29.996	29.954	29.862	29.820	29.751	29.736	29.754	29.806
16	29.819	29.884	29.974	30.033	30.020	30.038	30.038	30.076
17	30.046	29.998	30.000	29.976	29.953	29.954	30.009	30.098
18	30.164	30.217	30.266	30.380	30.329	30.345	30.365	30.331
19	30.327	30.307	30.308	30.306	30.278	30.199	30.157	30.137
20	30.083	29.981	29.928	29.867	29.770	29.639	29.532	29.554
21	29.613	29.637	29.663	29.761	29.839	29.886	29 946	30.044
22	30.070	30.040	30.050	30.036	29.996	29.918	29.907	29.905
23	29.856	29.814	29.780	29.708	29.676	29.655	29.746	29.835
24	29.880	29.928	30.030	30.084	30.051	30.042	30.066	30.078
25	30.039	30.004	29.956	29.882	29.732	29.536	29.392	29.388
26	29.436	29.478	29.535	29.640	29.709	29.776	29.844	29.944
27	29.983	30.063	30.084	30.099	30.093	30.035	30.018	30.031
28	30.028	29.984	29.952	29.871	29.817	29.704	29.713	29.760
29	29.728	29.711	29.741	29.818	29.816	29.809	29.888	29.980
30	29.975	29.954	29.964	29.942	29.886	29.807	29.763	29.714
Hourly means.	29.962	29.959	29.971	29.998	29.967	29.927	29.929	29.960

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.	in.	in.	in.	in.	in.	in.	in.	in.
May 1	29.695	29.652	29.658	29.646	29.625	29.540	29.529	29.552
2	29.574	29.592	29.613	29.651	29.655	29.665	29.699	29.813
3	29.894	29.960	30.044	30.142	30.103	30.084	30.086	30.127
4	30.105	30.058	30.060	30.007	29.954	29.843	29.757	29.722
5	29.600	29.565	29.571	29.608	29.625	29.630	29.626	29.658
6	29.683	29.694	29.729	29.759	29.743	29.716	29.748	29.824
7	29.869	29.898	29.954	30.030	30.024	29.995	30.012	30.086
8	30.108	30.081	30.082	30.067	30.020	29.940	29.930	29.988
9	29.993	29.999	30.021	30.043	29.988	29.930	29.914	29.939
10	29.962	29.983	30.000	30.017	29.980	29.925	29.924	29.954
11	29.969	29.980	30.021	30.063	30.064	30.148	30.258	30.352
12	30.372	30.348	30.373	30.371	30.328	30.264	30.220	30.218
13	30.192	30.143	30.153	30.143	30.080	30.008	29.991	29.995
14	29.967	29.932	29.949	29.949	29.924	29.882	29.889	29.927
15	29.916	29.931	29.955	29.954	29.939	29.895	29.879	29.858
16	29.976	29.726	29.708	29.720	29.692	29.644	29.643	29.707
17	29.760	29.786	29.857	29.887	29.858	29.788	29.853	29.747
18	29.778	29.736	29.778	29.814	29.815	29.706	29.849	29.918
19	29.936	29.942	29.962	29.983	29.951	29.911	29.885	29.899
20	29.904	29.871	29.859	29.852	29.831	29.771	29.726	29.767
21	29.761	29.717	29.774	29.775	29.813	29.793	29.826	29.904
22	29.916	29.927	29.970	29.997	29.967	29.936	29.954	30.001
23	30.040	30.045	30.093	30.077	30.038	29.988	29.962	29.966
24	29.946	29.927	29.926	29.900	29.894	29.836	29.821	29.852
25	29.803	29.723	29.711	29.671	29.524	29.499	29.526	29.588
26	29.627	29.664	29.701	29.719	29.725	29.741	29.790	29.862
27	29.911	29.961	30.007	30.034	30.020	29.984	29.959	29.981
28	30.015	30.007	30.014	30.017	29.979	29.933	29.909	29.958
29	29.989	29.994	30.026	30.029	30.030	29.984	29.979	30.004
30	29.994	29.988	30.015	30.061	29.996	29.943	29.905	29.910
31	29.896	29.866	29.840	29.816	29.758	29.662	29.584	29.561
Hourly means.	29.908	29.893	29.917	29.929	29.901	29.858	29.827	29.892

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.	in.	in.	in.	in.	in.	in.	in.	in.
e 1	29.542	29.494	29.546	29.588	29.611	29.638	29.689	29.788
2	29.880	29.888	29.990	30.047	30.038	30.015	30.018	30.064
3	30.102	30.082	30.087	30.095	30.079	30.052	29.999	29.989
4	29.954	29.937	29.951	29.980	29.982	29.944	29.923	29.951
5	29.950	29.916	29.930	29.944	29.933	29.869	29.918	29.932
6	29.899	29.898	29.906	29.914	29.872	29.834	29.815	29.839
7	29.841	29.816	29.823	29.830	29.780	29.738	29.717	29.734
8	29.694	29.667	29.697	29.742	29.748	29.672	29.659	29.617
9	29.735	29.749	29.786	29.784	29.758	29.708	29.721	29.754
10	29.800	29.802	29.840	29.880	29.874	29.875	29.894	29.935
11	29.922	29.930	29 938	29.902	29.875	29.862	29.790	29.783
12	29.772	29.734	29.751	29.770	29.746	29.729	29.743	29.842
13	29.894	29.924	29.990	30.056	30.078	30.052	30.106	30.161
14	30.202	30.216	30.230	30.254	30.257	30.186	30.168	30.186
15	30.205	30.202	30.245	30.249	30.228	30.172	30.132	30.157
16	30.147	30.111	30.112	30.091	30.045	29.970	29.920	29.916
17	29.895	29.838	29.831	29.840	29.833	29.812	29.852	29.906
18	29.925	29.918	29.928	29.941	29.895	29.847	29.853	29.898
19	29.926	29.967	29.973	29.988	29.968	29.890	29.920	29.963
20	29.986	30.004	30.027	30.051	30.053	30.037	30.041	30.064
21	30.078	30.070	30.084	30.085	30.062	30.030	30.007	30.022
22	30.046	30.031	30.056	30.059	30.035	29.997	29.967	29.982
23	29.978	29.963	29.988	29.988	29.935	29.858	29.825	29.842
24	29.828	29.826	29.856	29.892	29.898	29.853	29.881	29.940
25	29.950	29.945	29.980	29.982	29.930	29.842	29.801	29.826
26	29.774	29.716	29.725	29.700	29.662	29.611	29.604	29.632
27	29.644	29.636	29.709	29.757	29.771	29.751	29.733	29.771
28	29.771	29.749	29.775	29.764	29.735	29.679	29.668	29.674
29	29.663	29.644	29.672	29.658	29.639	29.586	29.638	29.697
30	29.732	29.740	29.791	29.835	29.910	29.894	29.870	29.905
Hourly means.	29.891	29.880	29.907	29.922	29.908	29.867	29.862	29.892

Mean Time.		0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.		in.	in.	in.	in.	in.	in.	in.	in.
July	1	29.924	29.928	29.966	29.995	29.986	29.947	29.931	29.951
	2	29.942	29.914	29.908	29.891	29.870	29.814	29.780	29.791
	3	29.848	29.874	29.912	29.946	29.931	29.903	29.906	29.924
	4	29.915	29.906	29.937	29.928	29.849	29.739	29.666	29.719
	5	29.736	29.702	29.743	29.722	29.825	29.846	29.876	29.924
	6	29.978	29.999	30.034	30.056	30.042	30.025	30.000	30.041
	7	30.051	30.046	30.047	30.052	30.024	29.966	29.916	29.89
	8	29.879	29.833	29.843	29.830	29.783	29.749	29.711	29.7
	9	29.731	29.731	29.756	29.776	29.780	29.742	29.711	29.757
	10	29.778	29.799	29.826	29.821	29.784	29.723	29.744	29.832
	11	29.850	29.848	29.864	29.870	29.831	29.807	29.817	29.878
	12	29 874	29 871	29.905	29.960	29.926	29.903	29.910	29.931
	13	29.950	29.960	30.010	30.055	30.091	30.046	30.064	30.092
	14	30 125	30,154	30.183	30.197	30.181	30.121	30.109	30.127
	15	30.107	30.088	30.092	30.060	30.021	29.945	29.901	29.872
	16	29.873	29.842	29.854	29.837	29.809	29.797	29.797	29.853
	17	29.882	29.945	29.987	29.998	29.927	29.958	29.946	29.987
	18	30.017	30.046	30.081	30.099	30.082	30.071	30.077	30.122
	19	30.142	30.163	30.183	30.189	30.154	30.117	30.103	30.129
	20	30.126	30.094	30.104	30.087	30.042	29.977	29.955	29.956
	21	29.971	29.942	29.973	29.982	29.975	29.960	29.947	29.963
	22	29.957	29.954	29.982	30.000	29.995	29.967	29.954	29.989
	23	30.002	29.991	30.010	30.026	30.008	29.982	29.944	29.978
	24	29.992	29.994	30.002	30.014	30.007	29.971	29.944	29.998
	25	30.004	29.983	30.021	30.014	30.000	29.973	29.971	30.015
	26	30.027	30.009	30.012	30.009	29.998	29.963	29.927	29.889
	27	29.893	29.838	29.832	29.833	29.821	29.810	29.818	29.846
	28	29.838	29.836	29.835	29.862	29.846	29.821	29.799	29.829
	29	29.812	29.802	29.793	29.829	29.839	29.828	29.840	29.882
	30	29.911	29.924	29.954	29.984	29.970	29.942	29.932	29.981
	31	29.975	29.945	29.946	29.916	29.878	29.811	29.869	29.796
Hourly means.		29.939	29.934	29.955	29.963	29.944	29.910	29.899	29.925

Mean Time.		0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.		in.	in.	in.	in.	in.	in.	in.	in.
August	1	29.777	29.739	29.735	29.694	29.620	29.602	29.590	29.608
	2	29.624	29.602	29.658	29.663	29.672	29.686	29.711	29.758
	3	29.799	29.845	29.896	29.934	29.938	29.917	29.930	29.982
	4	30.006	30.019	30.034	30.078	30.057	30.030	30.029	30.073
	5	30.064	30.083	30.090	30.106	30.071	30.028	30.018	30.042
	6	30.031	30.019	30.049	30.054	30.012	29.978	29.976	30.005
	7	30.007	29.966	29.970	29.950	29.926	29.886	29.966	29.966
	8	29.824	29.768	29.738	29.670	29.639	29.625	29.660	29.717
	9	29.734	29.729	29.774	29.799	29.799	29.777	29.819	29.837
	10	29.855	29.871	29.879	29.894	29.874	29.820	29.872	29.873
	11	29.888	29.891	29.922	29.941	29.940	29.920	29.920	29.956
	12	29.956	29.949	29.964	29.970	29.937	29.890	29.884	29.860
	13	29.879	29.841	29.868	29.885	29.875	29.846	29.840	29.878
	14	29.902	29.896	29.930	29.916	29.892	29.861	29.888	29.918
	15	29.897	29.897	29.942	29.957	29.943	29.929	29.956	29.988
	16	30.005	30.018	30.044	30.089	30.070	30.036	30.031	30.066
	17	30.102	30.102	30.124	30.142	30.110	30.055	30.024	30.040
	18	30.034	30.043	30.054	30.073	30.049	30.010	29.983	30.030
	19	30.054	30.111	30.148	30.173	30.156	30.099	30.078	30.083
	20	30.080	30.046	30.050	30.055	30.006	29.937	29.904	29.952
	21	29.963	29.950	29.952	29.950	29.898	29.808	29.764	29.760
	22	29.740	29.762	29.777	29.802	29.785	29.817	29.879	29.926
	23	29.930	29.932	29.931	29.910	29.881	29.851	29.830	29.830
	24	29.803	29.814	29.844	29.879	29.899	29.896	29.935	29.955
	25	29.955	29.863	29.989	30.045	30.048	30.044	30.062	30.098
	26	30.112	30.121	30.156	30.203	30.166	30.139	30.139	30.144
	27	30.145	30.131	30.147	30.161	30.127	30.095	30.085	30.081
	28	30.074	30.057	30.077	30.101	30.073	30.108	29.996	30.031
	29	30.017	30.002	29.989	29.998	29.947	29.894	29.867	29.879
	30	29.876	29.870	29.888	29.896	29.873	29.845	29.848	29.873
	31	29.890	29.880	29.910	29.970	29.972	29.958	29.971	30.008
Hourly means.		29.936	29.930	29.953	29.966	29.944	29.916	29.918	29.942

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.	in.	in.	in.	in.	in.	in.	in.	in.
September 1	30.034	30.042	30.073	30.101	30.079	30.048	30.044	30.067
2	30.073	30.064	30.086	30.102	30.063	30.005	29.994	30.011
3	30.013	29.988	30.013	30.014	29.968	29.911	29.911	29.955
4	29.968	30.029	30.108	30.135	30.132	30.124	30.160	30.200
5	30.205	30.198	30.222	30.223	30.185	30.132	30.105	30.133
6	30.120	30.102	30.102	30.100	30.068	29.986	29.954	29.980
7	29.993	30.000	30.034	30.074	30.043	29 989	29.980	29.998
8	29.991	29.968	29.968	29.997	29.909	29.803	29.808	29.857
9	29.890	29.894	29.948	30.024	30.022	29.997	30.009	30.043
10	30.046	30.038	30.057	30 079	30.039	30.015	29.943	29.952
11	29.947	29.915	29.926	29.938	29.938	29.871	29.877	29.908
12	29.913	29.907	29.940	29.994	29.975	29.944	29.955	30.003
13	30.045	30.074	30.121	30.159	30.163	30.155	30.166	30.188
14	30.211	30.200	30.209	30.241	30.207	30.156	30.140	30.140
15	30.131	30.083	30.079	30.082	30.036	29.983	29.980	29.970
16	29.930	29.912	29.897	29.926	29.915	29.871	29.885	29.916
17	29.903	29.868	29.882	29.885	29.860	29 848	29.871	29.908
18	29.922	29.950	29.980	30.010	30.008	29.988	30.010	30.045
19	30.036	30.049	30.069	30.073	30.036	29.980	29.954	29.980
20	29.944	29.887	29.893	29.897	29.916	29.934	29.955	29.999
21	30.043	30.076	30.128	30.160	30.142	30.099	30.109	30.134
22	30.157	30.162	30.182	30.209	30.182	30.142	30.134	30.156
23	30.153	30.173	30.187	30.212	30.177	30.150	30.146	30.178
24	30.187	30.194	30.220	30.247	30.219	30.184	30.171	30.201
25	30.214	30.213	30.217	30.234	30.203	30.151	30.122	30.140
26	30.126	30.112	30.110	30.115	30.060	30.010	29 980	29.982
27	29.982	29.958	29.952	29.953	29.905	29.836	29.811	29.815
28	29.779	29.741	29.734	29.720	29.664	29.629	29.618	29.640
29	29.576	29.464	29.440	29.426	29.413	29.430	29.510	29.583
30	29.600	29.597	29.618	29.660	29.653	29.683	29.755	29.819
Hourly means.	30.004	29.999	30.013	30.033	30 006	29.968	29.969	29.997

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.	in.	in.	in.	in.	in.	in.	in.	in.
October 1	29.841	29.863	29.926	29.964	29.916	29.858	29.845	29.824
2	29.764	29.701	29.696	29.684	29.642	29.669	29.778	29.891
3	29.931	29.954	30.016	30.055	30.040	30.009	30.029	30.071
4	30.082	30.111	30.154	30.197	30.201	30.173	30.209	30.161
5	30.269	30.266	30.279	30.313	30.254	30.189	30.159	30.161
6	30.125	30.104	30.094	30.117	30.049	30.010	30.008	30.022
7	30.018	30.024	30.028	30.067	30.048	30.018	30.004	30.044
8	30.015	29.994	29.987	29.982	29.931	29 857	29.819	29.830
9	29.834	29.851	29.874	29.910	29.883	29.848	29.821	29.825
10	29.794	29.729	29.710	29.715	29.658	29.621	29.632	29.682
11	29.677	29.716	29.746	29.787	29.761	29.762	29.809	29.858
12	29.916	29.941	29.984	30.040	30.031	30.008	30.048	30.090
13	30.101	30.120	30.144	30.213	30.197	30.197	30.235	30.264
14	30.251	30.253	30.272	30.311	30.300	30.276	30.297	30 334
15	30.351	30.354	30.373	30.398	30.349	30.289	30.251	30.250
16	30.220	30.208	30.216	30.206	30.155	30.092	30.044	30.055
17	29.983	29.964	29.944	29.923	29.865	29.780	29.744	29.722
18	29.661	29.622	29.648	29.697	29.681	29.680	29.754	29.818
19	29.838	29.868	29.937	29.994	29.967	29.959	30.004	30.070
20	30.091	30.105	30.140	30.195	30.163	30.134	30.163	30.177
21	30.176	30.168	30.213	30.259	30.251	30.244	30.275	30.304
22	30.309	30.312	30.315	30.329	30.278	30.218	30.206	30.219
23	30.213	30.212	30.237	30.274	30.247	30.212	30.245	30.274
24	30.306	30.329	30.362	30.401	30.376	30.347	30.342	30.363
25	30.368	30.371	30.376	30.398	30.365	30.306	30.293	30.295
26	30.291	30.249	30.250	30.258	30.186	30.127	30.103	30.103
27	30.068	30.011	30.009	30.014	29.942	29.874	29.868	29.884
28	29.888	29.900	29.903	29.950	29.923	29.888	29.888	29.900
29	29.884	29.872	29.858	29.851	29.782	29.713	29.716	29.722
30	29.726	29.757	29.802	29.900	29.905	29.899	29.965	30.008
31	30.020	30.014	30.004	30.015	29.963	29.966	30.023	30.048
Hourly means.	30.033	30.030	30.048	30.078	30.042	30.004	30.019	30.041

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.	in.	in.	in.	in.	in.	in.	in.	in.
November 1	30.043	30.040	30.069	30.102	30.044	29.979	30.000	30.087
2	30.114	30.153	30.195	30.252	30.222	30.206	30.245	30.269
3	30.262	30.281	30.303	30.335	30.287	30.259	30.279	30.277
4	30.269	30.249	30.287	30.315	30.255	30.213	30.271	30.272
5	30.217	30.194	30.195	30.223	30.165	30.080	30.078	30.073
6	30.060	30.060	30.088	30.137	30.131	30.121	30.173	30.212
7	30.238	30.252	30.298	30.353	30.321	30.286	30.297	30.33
8	30.341	30.331	30.337	30.331	30.275	30.182	30.145	30.12
9	30.057	29.978	29.938	29.912	29.880	29.885	29.927	29.975
10	30.004	30.002	30.016	30.036	29.960	29.891	29.872	29.828
11	29.786	29.755	29.791	29.819	29.841	29.878	29.965	30.025
12	30.065	30.090	30.124	30.167	30.127	30.139	30.210	30.256
13	30.254	30.292	30.316	30.357	30.343	30.357	30.412	30.462
14	30.478	30.521	30.581	30.629	30.599	30.546	30.551	30.539
15	30.502	30.477	30.453	30.454	30.379	30.341	30.364	30.392
16	30.423	30.426	30.469	30.518	30.501	30.452	30 433	30.450
17	30.425	30.384	30.372	30.385	30.298	30.225	30.209	30.197
18	30.159	30.158	30.153	30.178	30.141	30.141	30.180	30.216
19	30.251	30.250	30.248	30.271	30.203	30.147	30.113	30.101
20	29.967	29.840	29.672	29.643	29.503	29.459	29.486	29.533
21	29.636	29.696	29.810	29.882	29.873	29.889	29.978	30.011
22	30.043	30.062	30.075	30.119	30.070	29.990	29.944	29.872
23	29.743	29.599	29.483	29.378	29.201	29.160	29.262	29.399
24	29.445	29.477	29.504	29.577	29.578	29.581	29.655	29.721
25	29.754	29.782	29.816	29.901	29.874	29.857	29.903	29.965
26	29.984	30.038	30.106	30.183	30.190	30.207	30.260	30.313
27	30.352	30.377	30.405	30.479	30.437	30.423	30.450	30.444
28	30.423	30.384	30.379	30.350	30.247	30.131	30.051	29.921
29	29.793	29.627	29.740	29.819	29.845	29.876	29.965	30.011
30	30.058	30.130	30.214	30.297	30.365	30.378	30.468	30.509
Hourly means.	30.105	30.097	30.115	30.147	30.105	30.076	30.105	30.127

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.	in.	in.	in.	in.	in.	in.	in.	in.
December 1	30.541	30.527	30.525	30.512	30.392	30.301	30.255	30.223
2	30.193	30.195	30.195	30.243	30.172	30.120	30.111	30.068
3	30.011	29.987	29.949	29.940	29.874	29.838	29.890	29.923
4	29.965	30.038	30.150	30.259	30.287	30.293	30.343	30:383
5	30.413	30.413	30.401	30.400	30.322	30.269	30.260	30.235
6	30.189	30.145	30.098	30 073	29.982	29.932	29.898	29.877
7	29.824	29.768	29.741	29.778	29.724	29.694	29.718	29.757
8	29.791	29.858	29.910	30.010	30.060	30.085	30.113	30.119
9	30.102	30.013	29.996	29.985	29.938	29.918	29.988	30.048
10	30.107	30.148	30.201	30.283	30.246	30.191	30.173	30.159
11	30.131	30.105	30.106	30.142	30.105	30.091	30.123	30.160
12	30.186	30.203	30.213	30.255	30.230	30.221	30.236	30.230
13	30.209	30.192	30.179	30.173	30.124	30.058	30.028	29.972
14	29.903	29.818	29.746	29 782	29.863	29.985	30.136	30.227
15	30.285	30.334	30.382	30.490	30.480	30.450	30.455	30.487
16	30.486	30.470	30.452	30.428	30.329	30.257	30.196	30.120
17	30.048	29.950	29.919	29.883	29.817	29.853	29.912	29.915
18	29.914	29.959	30.025	30.101	30.048	29.999	29.967	29.927
19	29.966	29.939	29.977	30.051	30.037	30.029	30.082	30.082
20	30.014	29.996	29.922	29.871	29.688	29.567	29.532	29.588
21	29.692	29.824	29.928	30.040	30.054	30.075	30.139	30.105
22	30.102	30.087	30.046	29.974	29.868	29.808	29.795	29.797
23	29.834	29.916	29.969	30.045	30.019	29.997	29.974	29.944
24	29.862	29.820	29.832	29.878	29.864	29.893	30.060	30.112
25	30.163	30.250	30.295	30.365	30.340	30.308	30.305	30.295
26	30.247	30.245	30.187	30.188	30.127	30.055	30.006	29.982
27	29.949	30.004	30.022	30.109	30.084	30.048	30.042	30.034
28	29.991	29.944	29.916	29.934	29.816	29.801	29.761	29.823
29	29.821	29.783	29.794	29.894	29.958	29.994	30.090	30.166
30	30.213	30.299	30.342	30.397	30.323	30.327	30.371	30.448
31	30.496	30.559	30.609	30.691	30.662	30.647	30.684	30.698
Hourly means.	30.085	30.074	30.098	30.135	30.091	30.068	30.085	30.126

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.	Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.	°	°	°	°	°	°	°	°	1874.	°	°	°	°	°	°	°	°
January 1	33.1	34.1	33.1	34.9	39.6	42.1	40.9	39.6	February 1	31.1	29.6	26.6	25.1	25.9	26.1	25.6	25.6
2	40.1	40.6	41.2	41.6	47.1	52.6	47.1	43.6	2	25.3	22.6	20.1	18.6	20.8	24.1	23.6	26.1
3	41.6	40.1	38.1	39.9	59.6	61.6	54.8	53.6	3	26.6	27.1	27.1	26.9	31.4	35.3	32.6	34.1
4	53.8	53.1	52.1	54.1	65.5	65.1	60.1	57.3	4	33.1	32.1	29.1	28.1	33.1	35.1	29.7	26.1
5	56.1	55 1	54.3	50.1	47.4	43.6	37.6	35.5	5	22.3	24.1	28.3	31.1	37.1	34.1	30.6	26.6
6	35.5	34.6	34.1	35.6	39.8	42.9	45.5	50.1	6	25.1	26.1	25.4	25.6	24.3	22.3	22.1	22.1
7	52.1	55.1	57.6	57.6	61.6	63.0	54.1	50.9	7	22.1	21.8	21.6	23.6	25.1	28.1	27.1	25.1
8	49.6	47.1	41.1	39.1	43.1	44.1	38.6	35.1	8	23.6	24.6	20.7	24.8	33.6	35.1	28.9	21.6
9	33.1	30.6	30.1	31.9	47.7	52.6	43.6	41.6	9	15.1	14.1	15.1	19.1	30.7	33.1	31.1	27.1
10	40.6	39.1	33.1	35.1	49.1	50.1	42.1	40.6	10	30.6	27.1	26.1	27.1	30.6	35.3	30.6	25.2
11	35.6	34.1	30.1	34.1	42.6	45.1	37.9	33.6	11	28.1	27.1	31.1	30.6	40.6	48.3	41.1	35.7
12	31.1	30.1	29.1	34.1	37.5	37.6	31.1	30.1	12	31.5	29.6	28.1	29.6	43.3	44.1	38.1	34.6
13	27.6	27.1	26.6	27.1	31.1	31.5	29.1	28.1	13	35 1	36.1	38.6	41.6	45.0	47.6	50.1	53.1
14	28.6	27.1	27.6	26.5	34.6	32.1	28.7	27.1	14	54.1	54.7	42.1	41.1	48.6	49.3	43.6	37.6
15	23.1	17.1	13.3	17.1	18.1	18.4	13.6	13.6	15	31.6	30.6	31.1	34.6	48.6	48.6	42.6	40.1
16	12.6	11.1	10.1	13.6	20.1	21.6	16.8	14.6	16	38.1	37.1	38.1	40.6	55.6	58.6	49.1	42.1
17	14.1	13.1	11.1	12.6	28.1	28.1	23.7	18.1	17	36.6	32.1	29.1	30.6	38.6	39.1	33.7	28.6
18	14.3	11.1	9.4	13.8	34.1	36.6	33.6	31.3	18	26.6	25.1	22.1	22.6	29.9	37.3	29.6	26.1
19	30.9	30.9	31.6	32.6	37.1	39.9	39.1	38.8	19	25.1	24.6	26.1	30.1	33.6	34.7	34.7	35.1
20	38.6	38.1	37.8	38.1	45.1	42.1	36.6	33.6	20	35.6	36.6	37.1	38.1	50.6	55.6	54.1	47.1
21	32.1	33.1	33.9	35.1	40.6	46.6	44.7	45.6	21	47.1	46.1	45.6	50.6	66.6	69.7	64.1	61.1
22	45.3	46.4	48.6	49.1	57.7	62.6	61.1	57.1	22	56.9	56.1	55.1	58.1	69.6	73.6	66.8	62.9
23	58.1	57.6	61.1	64.6	71.3	66.1	51.6	42.3	23	61.1	60.1	59.3	63.7	74.7	76.1	64.1	52.1
24	39.1	36.1	31.7	33.1	44.4	44.6	37.6	30.1	24	46.1	39.1	34.6	33.6	33.3	35.9	34.1	32.1
25	25.6	22.1	20.1	22.4	28.3	30.4	24.1	22.1	25	32.1	30.1	28.1	26.6	28 9	28.1	26.9	25.6
26	20.1	18.1	16.6	18.6	27.1	29.7	30.1	32.6	26	20.1	19.1	23.6	27.1	37.1	39.1	32.1	29.1
27	33.1	34.1	35.1	37.1	40.1	39.6	39.1	40.1	27	30.1	29.1	25.1	29.1	40.6	43.1	39.1	34.1
28	42.1	42.7	45.3	48.6	58.3	51.6	43.1	39.6	28	29.6	27.1	26.1	28.9	39.6	43.1	37.6	33.6
29	35.8	34.1	32.1	34.7	47.7	51.6	44.1	38.3									
30	35.1	33.1	32.6	36.8	40.4	39.1	31.7	31.3									
31	30.1	29.1	27.6	29.3	33.6	38 7	37.1	33.1									
Hourly means.	35.1	34.1	33.1	34.8	42.5	43.6	38.7	36.4	Hourly means.	32.9	31.8	30.8	32.4	39.9	45.7	37.0	34.7

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.	Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.	°	°	°	°	°	°	°	°	1874.	°	°	°	°	°	°	°	°
March 1	30.7	28.6	27.1	31.6	47.6	52.6	48.1	39.5	April 1	32.1	30.9	29.7	39.6	33.9	33.1	34.6	34.1
2	34.1	31.1	28.6	33.9	53.6	59.1	51.6	46.1	2	33.1	33.1	33.1	36.6	41.1	44.6	41.7	37.6
3	43.1	38.6	38.7	43.6	48.6	58.1	56.1	54.1	3	35.2	32.6	35.7	44.4	47.8	56.5	52.7	42.1
4	55.1	54.6	53.6	54.1	68.1	66.5	47.1	43.1	4	37.1	36.1	33.1	43.1	45.1	42.6	36.6	30.6
5	38.6	34.6	30.6	37.1	46.1	51.6	46.1	41.6	5	28.1	25.1	23.1	33.3	41.1	44.3	37.7	36.4
6	41.1	39.1	38.3	40.1	39.6	40.6	37.7	35.9	6	37.3	36.4	38.5	53.8	63.8	68.1	61.6	51.6
7	35.6	35.3	35.7	38.1	42.1	44.1	42.6	41.1	7	50.1	49.1	46.1	49.1	55 3	64.9	60.7	50.6
8	38.5	34.6	38.1	42.6	48.1	49.7	42.1	39.1	8	46.6	45.1	44.6	48.1	57.7	56.9	51.6	49.6
9	32.6	29.6	28.6	32.7	36.6	37.1	36.6	34.1	9	48.9	48.1	47.9	47.6	45.1	42.8	42.1	41.1
10	33.1	32.6	32.1	36.6	47.1	48.6	44.1	40.1	10	39.9	38.7	37.6	42.6	46.1	46.7	42.6	39.1
11	36.6	33.1	31.6	36.6	41.9	45.1	38.6	34.1	11	37.1	33.6	32.9	46.5	57.6	62.6	59.1	41.6
12	29 0	27.6	31.6	35.6	39.5	40.6	33.6	28.6	12	32.6	27.1	24.6	32.7	41.8	46.1	41.6	33.3
13	27.1	24.9	22.6	25.1	30.1	30.3	27.6	25.9	13	29.1	26.1	25.6	40.1	47.9	52.6	47.6	40.6
14	25.1	24.1	24.6	31.1	39.2	43.1	36.1	31.1	14	39.6	39.1	40.1	50.6	53.1	56.1	55.6	53.6
15	29.1	26.6	25.6	36.1	47.1	52.1	43.6	37.6	15	53.1	54.1	54.6	59.1	65.6	66.1	64.1	60.1
16	36.6	36.1	36.4	36.1	38.5	38.6	38.1	39.1	16	56.6	52.1	48.6	46.4	46.1	46.1	45.8	44.6
17	38.4	37.8	40.1	42.6	47.7	60.3	57.6	53.6	17	42.6	41.1	40.9	42.0	44.5	44.9	43.6	41.6
18	51 4	50.1	49.6	51.1	53.1	57.6	59.3	53.6	18	40.1	38.9	39.1	41.8	48.8	46.6	44.1	42.6
19	51.6	50.6	51.1	57.5	63.6	69.6	68.3	61.3	19	41.0	42.4	41.6	42.6	43.9	44.4	43.6	44.1
20	59.6	55.1	50 6	43.6	46.6	52.3	49.1	40.1	20	43.1	43.8	43.9	45.7	49.0	54.1	61.6	57.7
21	37.8	39.6	35.6	44.1	54.6	58.1	50.1	44.7	21	54.1	53.6	54.6	59.1	58.7	69.6	53.5	45.6
22	40.6	39.1	42.1	52.6	57.1	57.6	53.6	44.1	22	44.0	41.1	42.6	51.2	56.3	57.6	52.6	57.6
23	49.1	49.1	42.6	42.2	43.5	40.6	36.6	32.1	23	45.1	44.1	45.6	47.5	49.6	50.6	49.1	47.6
24	27.1	24.1	22.6	29.1	36.1	40.1	35.1	29.1	24	45.1	42.1	40.6	51.6	57.1	57.1	52.6	50.1
25	25.2	24.1	23.9	37.4	53.1	56.6	51.1	45.3	25	47.1	46.6	42.1	41.1	42.7	42.6	42.1	41.6
26	43.6	41.1	43.1	48.6	54.2	59.1	56.6	51.1	26	39.1	38.1	41.7	46.1	52.3	51.6	49.3	43.6
27	50.1	42.1	43.9	47.6	53.7	59.9	54.1	47.9	27	42.6	35.6	35.6	47.6	56.6	62.6	57.6	48.6
28	44.6	44.1	45.1	45.1	49.1	57.6	54.1	46.1	28	44.1	43.1	45.6	50.2	54.8	55.1	50.1	42.1
29	44.1	43.7	41.1	45.1	49.1	51.6	49.3	41.6	29	37.6	35.6	31.6	32.1	40.6	45.1	42.3	36.3
30	35.1	33.1	33.6	44.3	56.6	65.1	59.1	49.1	30	34.1	34.6	34.1	47.6	56.6	56.1	53.1	49.1
31	44.7	41.1	39.6	42.6	35.6	36.9	35.6	33.6									
Hourly means.	39.0	37.0	36.4	40.8	47.3	51.0	46.4	41.4	Hourly means.	41.2	39.6	39.2	45.3	50.0	52.3	49.0	44.5

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.	°	°	°	°	°	°	°	°
May 1	48.1	47.1	46.9	51.6	64.3	69.2	65.1	62.1
2	57.1	54.1	51.8	52.6	54.1	53.7	50.7	48.0
3	44.6	42.1	41.1	45.3	53.1	59.1	54.6	45.3
4	42.7	40.1	40.3	46.1	47.6	44.6	44.1	43.1
5	45.1	44.6	46.1	46.7	50.0	44.1	54.1	47.4
6	45.3	40.6	39.6	55.1	62.6	64.6	57.6	53.1
7	47.6	45.1	39.1	52.6	58.1	62.6	57.1	46.4
8	41.1	40.6	41.6	53.0	66.4	70.6	68.6	63.1
9	57.1	55.6	55.1	73.1	80.9	80.6	75.1	67.1
10	63.1	57.6	54.6	70.4	84.1	89.5	81.1	71.1
11	62.1	55.1	55.1	76.9	81.4	68.4	55.7	50.6
12	47.3	45.1	44.1	49.5	59.6	65.1	62.1	55.3
13	52.1	52.6	51.7	59.9	72.1	74.6	70.1	64.6
14	60.6	58.1	58.1	67.8	78.6	79.5	73.9	66.6
15	63.6	59.1	60.1	72.1	65.1	63.6	62.6	61.1
16	57.1	55.1	55.6	59.6	69.1	71.1	65.6	63.1
17	62.6	58.6	54.1	66.1	69.7	72.9	69.1	63.6
18	61.6	60.1	57.1	60.6	68.0	69.0	61.6	52.6
19	49.6	44.1	45.1	59.6	66.7	70.7	66.1	67.5
20	53.3	50.3	53.1	58.3	60.3	65.3	62.6	57.6
21	54.1	51.1	49.1	62.1	66.1	67.1	61.6	54.1
22	48.1	46.1	46.1	61.6	67.6	71.4	64.6	55.3
23	49.1	44.6	46.1	63.6	70.1	69.6	65.6	61.6
24	59.6	58.1	58.3	61.6	65.6	69.1	66.9	61.1
25	61.1	61.6	62.1	64.6	81.0	69.6	69.6	65.6
26	60.6	60.6	58.4	69.5	75.1	72.1	67.1	60.1
27	54.1	50.4	51.1	62.3	69 1	74.3	72.6	61.6
28	56.7	53.1	57.1	71.1	79.1	84.6	82.1	73.1
29	64.3	59.6	59.7	69.1	80.1	86.1	83.1	71.1
30	67 3	63.1	64.6	74.1	82.6	84.1	78.6	71.6
31	67.6	64.6	64.6	76.1	81.6	84.3	80.1	72.6
Hourly means.	54.8	52.2	51.9	61.7	68.7	70.0	66.1	59.9

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.	°	°	°	°	°	°	°	°
June 1	72.6	71.1	69.6	77.1	79.9	80.7	74.1	64.1
2	60.6	53.1	52.1	64.9	69.7	72.7	67.1	61.1
3	58.1	56.6	57.6	61.1	58.9	60.3	60.7	60.1
4	60.1	59.6	59.6	64.3	70.3	75.1	77.1	69.6
5	67.1	65.1	67.1	71.4	84.9	85.1	73.1	70.6
6	70.1	69.6	71.6	72.4	76.6	81.5	81.1	74.3
7	71.6	71.1	71.1	81.6	84.6	90.1	85.4	68.6
8	74.6	73.6	72.6	85.1	90.6	89.8	83.6	80.1
9	76.6	73.1	72.6	87.9	93.8	95.6	91.7	81.7
10	77.1	74.1	73.6	87.1	90.1	83.1	77.1	73.9
11	72.6	68.6	69.1	74.1	72.1	77.6	77.7	75.6
12	74.1	69.1	68.6	80.1	87.1	74.6	78.9	69.1
13	64.1	61.1	60.6	65.1	71.1	75.1	69.1	58.6
14	54.7	51.6	52.5	67.1	72.1	75.1	71.6	65.9
15	60.2	57.1	55.6	70.1	77.6	80.1	75.6	67.6
16	63.1	60.1	61.6	73.1	76.9	77.1	75.6	73.1
17	71.6	67.7	67.9	73.7	81.1	82.1	76.1	67.6
18	63.2	64.1	68.4	78.5	85.1	88.4	83.6	69.7
19	65.1	58.3	60.1	74.6	81.1	83.6	82.6	71.6
20	67.9	65.1	63.1	73.7	75.5	75.1	71.5	67.1
21	66.6	63.6	64.6	70.1	74.7	77.7	76.6	68.7
22	65 1	64.6	63.6	77.3	86.1	89.7	85.1	75.6
23	71.1	69.1	67.1	82.7	92.7	94.6	86.1	80.6
24	77.6	75.1	74.4	85.1	87.1	94.1	89.1	78.1
25	71.1	66.6	64.6	76.6	84.1	88.1	85.6	77.1
26	71.1	69.6	71.1	82.5	80.1	88.8	82.6	75.6
27	75.1	70.6	72.1	82.1	81.1	78.9	81.1	76.1
28	73.6	73.6	74.1	77.1	84.6	92.5	89.1	79.4
29	76.6	75.4	73.7	86.6	93.8	96.8	87.4	80.1
30	75.6	74.1	74.6	78.1	71.1	75.1	77.6	70.6
Hourly means.	69.0	66.4	66.5	76.0	80.5	82.6	79.1	71.7

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.	°	°	°	°	°	°	°	°
July 1	67.6	64.7	66.1	76.6	82.6	86.6	80.6	74 9
2	70.6	69.7	72.1	75.6	83.1	85.4	82.7	78.1
3	73.6	68.6	66.5	77.6	85.1	89.1	83.9	72.6
4	66.1	64 7	65.1	80.1	90.1	92.1	86.6	71.1
5	70.1	68.6	68.6	77.7	79.1	80.6	77.6	68.6
6	64 9	62.7	63.3	75.1	78.3	82.7	80.1	70.1
7	65.6	65.3	65.6	74.1	80.5	83.6	81.1	73.1
8	69.6	68.1	69.3	76.6	88.7	92.3	88.4	77.6
9	74.6	72.1	71.3	83.1	90.5	95.5	88.4	84.1
10	78.3	73.6	72.6	84.7	92.1	91.6	90.1	76.1
11	74.1	73.1	74.6	82.1	86.1	77.6	74.3	73.1
12	72.1	71.1	71.1	76.1	79.3	74.9	75.1	72.1
13	71.3	70.6	70.7	79.6	84.3	88.1	82.6	76.1
14	71.9	69.3	69.3	82.6	88.6	91.6	85.3	75.6
15	72.1	70.1	70.6	83.6	89.1	93.6	87.3	78.6
16	74.6	70.1	71.6	84.6	89.1	82.3	82.6	75.7
17	71.1	62.9	62.6	73.1	79.1	83.6	79.6	70.6
18	66.6	62.6	64.1	78.1	84.6	88.1	82.7	72.6
19	68.1	64.6	65.1	79.1	87.1	90.4	84.1	74.6
20	70.1	66.6	66.1	81.1	90.6	93.2	84.3	76.7
21	76.6	73.1	73.6	74.8	74.8	72.7	69.3	68.1
22	67.6	64.1	63.6	75.6	81.6	81.6	81.1	70.3
23	64.9	62.1	61.6	77.6	82.6	85.1	77.6	70.2
24	68.1	67.1	66.1	77.1	83.4	82.1	76.1	71.9
25	69.3	67.1	68.6	80.1	87.1	88.1	80.1	75.1
26	71.9	68.6	69.1	78.8	81.4	81.1	76.8	71.6
27	70.7	69.6	69.6	71.3	73.3	70.9	70.6	69.6
28	70.1	69.7	70.6	73.1	78.6	77.6	75.6	73.1
29	72.3	68.7	69.3	71.1	71.1	74.7	71.6	67.6
30	63.9	61.7	60.1	74.1	81.6	84.7	80.6	69.1
31	63.6	60.9	62.1	77.6	86.6	88.1	81.6	74.6
Hourly means.	70.1	67.5	67.8	77.8	83.6	84.8	80.6	73.3

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.	°	°	°	°	°	°	°	°
August 1	70.7	67.6	68.1	81.1	85.7	82.1	76.1	72.6
2	70.6	68.6	67.6	76.9	85.6	87.4	80.3	78.6
3	64.6	62.1	59.6	73.3	80.4	85.1	79.1	67.6
4	64.1	62.6	59.6	70.1	78.1	80.9	78.6	66.5
5	60.6	58.1	55.8	74.6	81.6	84.6	74.7	68.5
6	64.6	62.6	62.1	74.6	83.3	82.7	77.6	70.1
7	68.6	67.6	67.1	71.6	70.1	70.6	69.0	68.5
8	69.1	68.6	69.1	72.3	77.6	82.1	75.5	70.3
9	67.6	67.1	64.6	79.1	89.4	92.3	83.6	70.6
10	66.6	64.1	63.1	75.6	86.1	85.6	73.1	68.1
11	65.6	64.6	63.1	74.3	87.1	88.6	84.1	74.6
12	69.6	66.1	64.6	79.6	88.3	92.1	82.6	71.9
13	70.1	70.3	70.1	77.1	89.4	93.4	85.9	76.6
14	70.6	66.9	64.1	75.6	82.1	86.1	77.1	69.7
15	69.3	68.1	63.7	75 6	80.6	88.8	79.6	68.6
16	62.6	58.6	58.1	76.1	84.6	87.1	79.6	72.1
17	66.5	59.1	58.6	77.1	83.1	85.1	79.1	68.6
18	62.1	59.1	57.3	78.1	90.1	92.6	85.1	76.6
19	73.6	71.1	70.6	80.1	87.6	92.6	84.8	77.6
20	72.6	68.1	68.1	85.7	98.6	102.7	95.1	81.1
21	75.6	70.1	67.6	84.6	98.1	101.6	91.4	83.6
22	80.3	72.6	72.3	77.3	83.3	75.1	69 1	67.6
23	66.1	65.1	64.6	69.9	67.1	64.4	62.6	62.6
24	62.1	60.9	59.6	60.6	63.6	65.1	65.6	64.6
25	63.1	62.6	63.1	68.9	70.0	70.3	65.1	63.1
26	58.6	57.1	55.6	68.6	73.5	75.9	68.1	58.6
27	56.6	55.1	53.3	67.4	70.1	71.1	67.1	57.1
28	54.6	51.6	49.1	68.6	74.3	76.9	70.1	62.3
29	56.1	53.1	49.6	65.9	75.3	78.6	70.1	60.1
30	54.6	51.1	50.6	66.4	73.6	76.1	71.3	68.4
31	64.6	64.1	61.7	64.1	70.4	80.1	72.6	62.9
Hourly means.	65.9	63.4	62.0	73.9	81.0	83.2	76.6	69.3

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.	Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.	°	°	°	°	°	°	°	°	1874.	°	°	°	°	°	°	°	°
September 1	59.3	57.9	58.6	72.1	86.1	87.6	77.6	66.3	October 1	48.3	44.7	43.9	57.6	65.6	69.1	57.6	52.9
2	61.1	58.6	56.6	71.1	86 1	88.1	77.4	69.3	2	53.6	53.6	51.6	62.1	76.6	78.1	63.9	57.3
3	63.6	61.6	59.6	75.6	90.4	91.1	81.7	72.7	3	51.3	46.1	43.7	57.8	68.3	72.1	59.6	56.1
4	67.6	67.1	66.0	69.6	76.6	74.6	66.4	65.9	4	54.1	52.6	51.6	58.9	65.6	62.6	55.4	49.1
5	65.6	65.1	65.1	74.1	82.3	81.1	77.1	71.1	5	44.6	42.1	41.6	51.6	59.3	62.3	54.6	48.1
6	66.1	66.6	66.1	73.6	78.5	88.6	79.9	73.6	6	44.1	42.1	41.1	52.6	59.6	61.1	58.6	57.6
7	69.0	67.1	66.1	75.1	85.6	87.6	79.4	70.5	7	57.1	56.1	55.7	58.5	70.1	69.1	62.1	59.6
8	68.1	65.1	64.1	64.7	84.1	89.6	69.4	70.1	8	61.1	60.3	59.9	66.1	68.7	67.7	64.6	60.1
9	70.1	67.6	62.1	75.1	81.5	80.6	75.1	67.6	9	59.1	56.1	52.1	59.1	69.6	70.9	61.6	58.1
10	62.1	59.6	55.1	70.9	80.9	84.6	76.6	66.0	10	57.6	59.7	61.1	64.6	71.1	73.6	62.6	59.1
11	62.6	60.6	58.6	72.6	87.1	90.1	81.7	73.6	11	55.1	53.1	51.6	60.9	73.1	74.7	61.1	55.5
12	68.6	66.1	65.6	79.1	89.1	94.9	83.1	76.1	12	53.1	47.6	45.1	53.4	55.6	60.3	50.6	46.1
13	71.9	71.6	71.1	75.1	77.1	79.1	74.1	71.6	13	44.1	44.6	43.6	49.7	50.9	48.7	44.7	39.6
14	70.6	70.1	69.1	72.6	77.1	75.6	71.1	68.6	14	37.1	35.1	34.6	44.9	46.6	53.1	44.1	37.6
15	68.6	67.3	67.1	71.6	80.1	77.1	70.3	68.9	15	35.6	32.6	32.6	42.1	59.9	61.9	50.4	45.1
16	68.1	69.1	70.1	69.3	69.1	71.6	69.1	66.6	16	41.6	39.1	37.1	44.1	53.7	63.1	53.1	43.1
17	66.6	65.9	66.1	65.6	69.6	69.6	68.1	66.1	17	40.7	40.1	39.7	49.3	61.7	68.1	60 4	55.4
18	65.1	62.6	61.6	70.6	78.7	84.1	74.1	68.6	18	53.1	51.1	46.6	57.9	62.6	63.1	55.1	45.4
19	65.6	63.6	64.1	71.6	79.1	80.1	75.1	70.6	19	43.9	41.1	37.1	46.1	57.6	62.1	49.9	42.7
20	71.6	71.1	70.6	72.3	67.1	66.6	67.1	60.1	20	37.1	37.1	36.1	46.9	67.1	67.1	54.7	45.9
21	57.1	53.3	51.1	62.1	69.1	72.6	63.6	56.1	21	42.1	39.6	37.7	50.6	72.4	72.6	61.3	50.1
22	53.4	51.1	49.6	63.1	70.6	70.6	63.6	58.1	22	45.6	42.4	41.6	48.8	66.1	72.6	62.4	54.6
23	54.9	50.1	49.7	66.4	72.6	77.1	68.1	62.1	23	49.1	45.1	44.5	53.6	70.6	71.7	61.1	54.1
24	58.6	57.1	55.7	67.1	76.1	77.1	68.9	62.6	24	49.9	51.1	52.9	55.1	62.7	64.5	61.6	58.6
25	59.1	56.5	55.6	68.3	76.6	78.1	69.6	63.1	25	56.9	55.1	54.4	54.1	60.7	61.1	55.1	49.1
26	60.6	57.1	55.6	67.6	78.3	80.4	71.4	64.1	26	46.6	43.6	42.1	49.6	67.6	70.1	59.6	50.4
27	61.7	59.6	57.1	70.1	80.1	80.1	72.6	68.9	27	45.4	42.1	41.6	50.1	68.3	77.1	66.1	56.1
28	65.7	64.1	62.9	68.6	72.6	71.1	66.1	62.3	28	54.3	51.1	49.3	57.1	69.3	70.9	64.1	58.6
29	61.1	59.5	58.1	59.1	57.9	60.6	57.6	55.1	29	55.1	49.6	47.6	57.1	78.1	77.6	68.6	66.6
30	52.9	49.6	52.1	62.9	63.9	62.6	55.1	51.6	30	64.3	62.1	59.7	54.1	56.6	56.1	48.1	43.1
									31	38.3	35.1	32.1	38.6	50.1	44.6	38.6	34.7
Hourly m eans.	63.9	62.1	61.0	69.9	77.5	79.1	71.7	66.3	Hourly means.	49.0	46.8	45.5	53.3	64.1	66.0	57.1	51.3

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.	Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.	°	°	°	°	°	°	°	°	1874	°	°	°	°	°	°	°	°
November 1	32.6	31.6	28.8	36.6	49.1	49.9	40.6	36.6	December 1	20.3	18.6	18.1	24.4	30.6	33.1	30.9	29.7
2	33.6	31.1	29.1	33.7	52.1	53.1	44.1	37.3	2	31.1	30.6	30.7	38.1	58.1	58.6	50.4	45.3
3	33.6	31.1	29.6	35.3	55.3	57.3	48.6	36.6	3	41.6	36.1	38.6	43.6	62.1	65.5	53.1	50.6
4	34.6	32.6	33.1	39.4	56.1	59.1	52.1	44.6	4	48.6	45.1	42.6	44.1	47.6	46.6	36.9	32.6
5	41.1	42.6	45.6	48.9	55.3	60.3	53.1	52.1	5	30.7	27.1	23.6	27.9	40.3	41.6	35.4	31.1
6	52.1	52.1	49.1	56.2	71.2	70.1	57.1	45.6	6	29.4	28.1	28.1	31.6	42.6	42.9	41.1	39.1
7	42.6	41.1	37.6	47.1	65.3	64.3	53.1	41.9	7	38.6	38.1	37.6	37.3	46.6	46.6	42.1	39.1
8	41.0	38.5	35.6	42.3	55.6	61.6	52.1	48.1	8	35.3	35.1	36.5	54.8	35.6	35.7	29.6	27.3
9	48.6	48.1	51.1	57.6	58.1	63.1	57.9	50.1	9	25.1	25.6	24.7	31.1	40.3	43.6	37.1	32.6
10	46.6	44.1	38.1	44.1	61.6	63.6	58.4	55.1	10	32.6	29.1	30.1	31.9	42.7	40.1	38.1	37.6
11	51.6	49.6	50.6	60.9	65.8	57.8	52.7	50.6	11	35.6	34.3	33.6	36.7	44.6	40.6	34.1	33.1
12	45.9	40.6	36.1	41.4	50.4	47.3	41.7	32.6	12	30 9	27.9	28.6	30.6	35.3	37.1	34.4	33.1
13	34.1	31.6	32.6	37.1	43.9	42.1	37.1	30.3	13	30.6	27.6	26.6	30.6	40.9	45.9	44.1	44.1
14	27.6	27.6	24.6	29.1	39.1	39.6	31.9	29.1	14	43.1	43.6	44.6	44.9	47.1	39.1	34.3	28.3
15	26.3	27.3	26.6	31.6	43.6	47.1	44.6	41.6	15	25.1	23.1	19.1	19.1	27.1	28.6	24.1	21.1
16	34.9	33.1	31.3	37.1	52.6	53.6	46.1	36.1	16	19.1	18.1	18.1	24.1	33.7	34.3	32.6	33.0
17	34.1	34.6	37.1	40.1	51.9	55.9	53.6	51.6	17	31.6	31.9	32.6	33.1	43.6	46.4	41.6	40.1
18	50.1	49.1	48.9	51.1	65.6	60.6	55.6	50.6	18	38.6	37.1	30.6	30.9	37.7	41.3	34.1	33.0
19	43.9	40.1	38.1	40.1	46.1	42.6	39.6	39.6	19	30.3	29.6	26.1	31.7	50.3	51.6	40.6	32.7
20	38.6	37.7	35.6	36.1	43.1	45.9	45.6	42.6	20	33.7	33.4	35.1	34.6	34.6	36.1	35.4	36.9
21	40.1	38.1	32.1	35.1	36.1	39.7	33.6	29.6	21	36.6	35.6	32.1	32.6	39.6	40.6	32.4	30.1
22	28.1	27.1	27.1	32.1	37.6	41.1	39.1	42.1	22	28.6	28.8	30.6	34.8	41.1	42.6	40.1	36.6
23	44.7	46.1	52.1	53.6	61.9	57.3	49.6	45.6	23	33.6	33.1	33.6	34.6	47.8	48.3	39.4	35.1
24	40.6	37.6	35.1	40.8	48.4	45.9	39.9	37.1	24	35.1	31.6	30.1	31.1	44.6	44.1	35.9	31.3
25	33.6	31.1	28.1	30.7	38.1	38.3	33.1	29.6	25	33.6	32.1	29.1	31.6	39.6	41.6	33.6	28.4
26	28.3	24.8	23.6	28.7	38.5	40.1	34.6	30.7	26	26.6	27.6	30.1	35.1	35.1	36.6	36.6	37.1
27	29.1	29.1	28.6	34.7	49.3	50.7	47.6	37.6	27	39.3	38.1	34.3	34.6	39.3	33.1	42.1	41.9
28	36.5	32.6	32.1	34.9	52.7	58.4	51.1	48.1	28	43.4	43.9	43.6	48.9	58.1	66.3	61.1	56.1
29	49.6	53.6	39.4	33.6	38.6	42.6	35.1	32.7	29	54.9	53.1	53.5	49.1	47.6	47.1	41.1	36.1
30	32.9	31.9	27.1	25.6	29.1	27.6	23.1	22.6	30	31.9	27.1	24.6	24.6	32.6	31.6	31.1	30.1
									31	25.1	22.1	20.6	20 1	26.6	29.6	24.6	21.6
Hourly means.	38.6	37.2	35.5	39.9	50.4	51.2	45.1	40.3	Hourly means.	33.6	32.0	31.2	34.1	41.7	42.5	37.7	35.0

Mean Time.		0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.		°	°	°	°	°	°	°	°
January	1	30.5	34.5	33.5	34.3	36.0	39.0	39.5	39.2
	2	40.5	41.0	42.0	42.3	47.5	50.7	47.0	44.0
	3	42.2	40.9	38.8	40.6	50.0	56.2	53.0	52.0
	4	53.0	53.0	52.0	53.2	60.0	59.6	57.2	55.8
	5	54.0	53.0	52.2	44.5	44.0	42.7	38.0	36.0
	6	36.0	35.3	34.7	36.3	40.5	43.5	46.2	50.8
	7	52.0	54.0	57.5	58.0	61.5	61.5	54.0	51.3
	8	50.2	45.0	40.0	39.5	40.5	39.0	36.0	33.6
	9	32.0	30.5	30.5	31.5	42.2	45.6	40.5	39.0
	10	38.8	38.5	33.0	33.5	41.2	41.0	36.6	36.5
	11	35.5	34.0	30.5	33.5	38.0	38.5	34.0	30.8
	12	29.0	28.0	26.5	26.5	32.5	32.4	29.0	28.5
	13	25.7	26.0	25.0	26.0	30.5	31.5	29.5	28.5
	14	29.0	27.5	28.0	27.0	32.5	31.0	29.0	27.8
	15	23.5	17.5	14.0	. .	16.5	16.5	12.5	12.5
	16	12.5	11.5	10.9	14.0	20.5	22.0	18.0	15.0
	17	14.5	13.5	11.5	13.0	28.6	28.6	24.0	18.5
	18	15.0	11.6	10.0	14.0	34.5	34.5	32.5	30.5
	19	30.0	31.0	32.0	32.8	37.5	40.0	39.5	38.5
	20	39.0	38.0	36.0	36.0	40.5	37.0	34.2	33.0
	21	32.0	32.0	33.5	35.0	39.5	44 5	43.6	45.5
	22	45.5	46.5	49.4	49.5	56.2	59.2	58.5	54.0
	23	57.0	56.5	59.5	61.0	62.8	55.0	43.0	37.8
	24	36.0	33.0	30.0	32.0	39.7	39.3	36.0	26.0
	25	23.4	22.0	20 0	22.5	29.0	31.0	24.8	22.5
	26	20.0	18.5	17.0	18.0	25.0	27.5	29.3	32.5
	27	33.0	34.0	35.2	33.5	36.0	37.5	38.5	40.5
	28	41.5	43.0	45.0	48.4	52.0	45.0	39.5	36.0
	29	34.5	33.5	31.0	33.5	42.0	44.5	40.5	36.5
	30	34.5	33.5	32.5	35.5	37.0	35.2	28.8	30.0
	31	29.0	28.0	27.5	30.0	32.5	37.0	36.5	33.7
Hourly means.		34.5	33.7	32.8	34.5	39.5	40.2	37.0	35.3

Mean Time.		0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.		°	°	°	°	°	°	°	°
February	1	30.5	28.5	26.0	24.0	24.6	25.6	26.2	26.2
	2	26.0	23.0	20.8	. .	. .	25.0	24.5	26.8
	3	27.5	27.9	28.0	27.8	32.0	34.0	32.5	33.5
	4	33.0	32.0	28.2	27.0	31.5	35.5	30.2	26.6
	5	23.0	24.0	29.0	31.5	35.7	31.8	30.9	27.0
	6	25.8	26.5	26.0	26.2	25.0	23.0	23.0	23.0
	7	22.8	22.5	22.0	22.0	25.0	27.4	26.8	25.5
	8	24.0	25.0	21.0	25.0	33.5	32.0	29.0	22.0
	9	15.8	14.9	16.0	19.8	27.0	30.5	29.5	27.5
	10	30.5	27.0	26.5	27.8	31.2	36.0	28.6	25.0
	11	27.5	27.0	31.5	31.0	36.0	40.7	37.5	33.5
	12	31.5	29.8	28.0	28.5	39.0	39.5	36.0	33.5
	13	35.0	36.2	39.0	40.5	45.0	48.0	50.6	53.5
	14	54.0	54.5	38.5	37.0	41.0	40.7	38.5	35.0
	15	31.6	30.0	29.0	31.5	40.5	42.3	39.0	38.2
	16	37.5	37.5	38.5	40.6	49.0	46.0	40.5	36.0
	17	33.0	30.0	26.0	26.5	32.5	33.0	29.5	27.8
	18	26.0	24.0	21.5	21.5	26.6	32.5	30.0	26.5
	19	25.5	25.0	26.5	30.8	33.0	35.2	35.4	35.8
	20	36.2	37.0	37.8	38.5	47.0	51.3	50.0	46.0
	21	46.0	46.0	45.5	50.2	60.6	62.0	61.0	57.5
	22	55.0	56.0	54.4	58.0	63.5	65.0	61.5	60.0
	23	59.0	58.0	56.5	59.5	64.2	64.5	54.0	41.5
	24	44.0	34.5	32.5	29.5	29.8	31.8	30.5	30.0
	25	29.5	29.5	28.0	27.0	29.0	28.0	27.5	26.2
	26	20.5	19.5	23.5	26.5	36.7	34.5	30.6	28.4
	27	29.2	29.0	25.5	29.2	35.5	37.0	31.7	31.0
	28	29.5	27.5	26.5	28.5	35.5	39.0	35.6	33.5
Hourly means.		32.4	31.5	30.4	32.0	37.4	38.2	35.8	33.4

Mean Time.		0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.		°	°	°	°	°	°	°	°
March	1	31.0	29.0	27.8	31.7	44.5	46.5	43.6	38.5
	2	34.5	31.0	29.0	32.2	47.6	50.8	46.5	44.0
	3	42.5	39.0	38.5	42 5	48.4	56.4	54.3	53.6
	4	54.3	54.0	53.0	52.0	59.5	57.0	43.5	39.6
	5	35.6	33.0	29.5	32.5	39.3	43.0	40.2	37.5
	6	41.0	38.5	37.5	38.5	38.2	39.0	38.2	36.5
	7	36.3	36.0	36.4	38.7	42.5	44.0	42.6	41.4
	8	36.0	33.2	32.0	35.0	38.5	40.5	36.0	34.0
	9	32.5	27.5	28.5	32.0	32.6	32.6	32.2	30.6
	10	30.5	30.0	29.2	31.8	39.3	39.5	36.8	33.6
	11	32.0	29.0	27.5	30.5	33.0	35.8	31.5	29.5
	12	26.0	25.7	30.5	32.5	33.0	33.5	29.2	25.5
	13	26.0	24.0	23.0	25.5	30.7	31.0	27.0	26.5
	14	25.8	24.7	25.3	31.8	33.6	36.5	32.5	28.5
	15	28 0	25.5	25.5	31.6	40.0	43.5	39.0	36.0
	16	35.0	35.0	35.0	36.0	38.7	38.7	38.5	39.6
	17	39.0	38.4	40.9	43.2	47.5	56.4	55.7	52.5
	18	50.5	50.2	50.0	51.9	53.0	56.5	57.6	53.5
	19	52.0	51.0	51.8	58.0	62.7	66.0	64.0	60.4
	20	57.0	52.0	47.5	42.5	42.0	44.6	43.5	39.5
	21	38.0	40.0	36.0	41.0	47.2	51.5	48.0	44.0
	22	40.5	39.0	42.5	49.5	49.5	46.5	45.0	39.0
	23	40.2	40.0	38.5	35.5	37.0	34.5	30.2	30.0
	24	24.5	24.0	22.5	29.5	33.0	33.4	30.0	26.6
	25	26.0	24.6	23.2	32.8	42.0	46.5	44.0	40.2
	26	39.4	38.0	40.5	44.5	51.0	56.0	54.5	50.5
	27	47.0	41.0	41.5	41.8	46.6	51.6	49.0	44.5
	28	43.5	43.0	42.8	40.5	43.5	48.5	44.0	39.5
	29	38.5	38.0	35.5	38.5	42.3	44.5	43.0	40.0
	30	35.0	33.0	33.5	43.0	51.0	54.5	48.0	44.2
	31	40.6	39.0	38.8	40.0	36.0	37.5	36.0	34.2
Hourly means.		37.3	35.7	35.2	38.3	42.7	45.0	42.0	42.3

Mean Time.		0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.		°	°	°	°	°	°	°	°
April	1	32.5	31.6	30.2	31.5	32.5	33.5	34.8	34.5
	2	33.5	33.5	33.2	36.0	39.5	42.0	40.0	37.3
	3	35.5	33.0	34.5	40.0	40.7	46.5	44.0	39.5
	4	36.0	35.7	33.5	39.4	40.5	35.2	30.5	27.0
	5	25.0	24.5	23.0	31.8	37.5	40.0	36.8	37.0
	6	38.0	38.8	39.0	50.5	55.5	57.0	53.5	50.0
	7	46.5	46.0	46.0	49.2	53.6	58.8	56.5	50.0
	8	46.5	45.5	45.0	47.0	54.0	52.0	51.5	50.0
	9	49.5	48.8	48.5	47.5	45.0	43.0	42.5	41.8
	10	40.5	39.2	38.0	41.5	43.2	43.0	39.5	36.5
	11	34.7	33.0	32.5	43.0	51.5	52.5	50.5	38.0
	12	28.5	24.2	24.0	32.5	35.5	37.5	34.5	30.0
	13	27.5	26.0	25.0	33.6	40 7	45.5	42.0	38.0
	14	38.0	37.0	40.5	48.0	51.6	54.3	55.0	53.3
	15	53.0	54.0	54.5	58.0	63.5	65.0	62.0	58.5
	16	56.5	50.5	45.0	45.5	43.5	44.6	43.5	44.0
	17	43.0	41.5	41.0	42.0	44.0	44.5	43.2	41.6
	18	40.0	39.0	38.8	41.0	45.4	43.5	41.6	41.5
	19	39.5	39.6	41.5	42.0	44.2	44.5	44.0	44.7
	20	43.5	43.0	44.5	46.5	49.5	54.5	61.0	58.5
	21	54.6	52.5	50.5	53.0	51.5	51.5	47.6	42.0
	22	41.0	40.5	41.8	46.4	50.2	51.2	50.0	46.0
	23	44.5	44 0	45.5	47.6	49.6	50.5	49.0	47.0
	24	44.0	41.8	41.0	47.5	51.0	52.0	48.4	48.5
	25	47.6	47.0	42.5	41.0	43.0	43.5	42.8	42.3
	26	39.5	38.5	40.3	41.6	46.0	45.0	44.0	41.0
	27	39.0	34.5	34.6	40.7	48.3	51.8	48.3	46.0
	28	41.2	41.5	44.0	46.0	49.2	49.5	47.0	40.5
	29	38.0	35.5	32.5	32.5	36.5	39.5	36.0	32.5
	30	31.0	31.5	31.5	41.0	47.5	46.5	46.6	47.2
Hourly means.		40.2	39.0	38.7	42.7	46.1	47.2	45.5	42.8

Mean Time.		0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.		°	°	°	°	°	°	°	°
May	1	46.0	45.0	46.5	46.3	57.5	58.8	57.0	53.7
	2	51.0	49.5	48.0	48.0	48.9	49.4	48.0	47.5
	3	42.5	42.0	39.5	40.5	44.5	50.0	49.2	44.0
	4	41.8	40.0	41.5	43.6	45.9	45.2	44.5	43.5
	5	43.5	43.0	46.5	47.0	49.2	50.0	51.3	47.0
	6	45.6	41.0	40.0	47.8	52.5	55.3	50.5	49.4
	7	44.5	44.0	38.5	44.6	48.0	51.5	48.0	44.0
	8	40.0	40.5	41.5	50.5	57.0	58.5	59.2	56.0
	9	52.5	51.5	51.0	63.0	66.2	66.2	64.5	59.5
	10	57.0	54.0	53.5	65.0	69.5	74.0	69.0	62.8
	11	59.3	54.4	55.0	68.5	68.5	59.2	49.9	47.2
	12	45.0	43.5	44.0	47.3	55.0	58.5	57.0	53.0
	13	51.6	52.0	51.5	58.8	68.4	70.0	66.0	62.0
	14	59.0	57.0	57.8	64.5	70.5	70 6	68.2	63.5
	15	61.5	58.8	60.2	66.5	64.5	63.5	62.5	61.2
	16	57.8	56.0	56.0	59 5	67.0	68.5	65.6	63.2
	17	62.5	56.5	54.0	59.5	61.4	64.0	62.5	59.6
	18	59.2	60.0	55.2	55.0	57.0	57.8	52.5	48.6
	19	45.4	43.5	44.0	51.0	55.3	68.6	57.5	53.6
	20	51.0	49.1	52.0	55.5	57.5	59.6	58.0	55.5
	21	52.8	50.0	49.0	55.7	58.0	58,5	54.0	50.5
	22	47.5	45.0	43.5	52.7	57.0	59.5	55.8	51.6
	23	48.0	44.5	46.5	54.5	60.5	62.5	58.5	58.5
	24	57.2	58.0	58.5	61.5	64.0	65.5	65.0	61.0
	25	61.2	62.0	62.0	65.0	76.5	68.0	69.0	66.0
	26	60.8	57.0	57.2	60.5	66.5	65.0	61.5	58.5
	27	53.5	50.5	51.5	56.9	62.0	65.0	64.0	59.0
	28	56.5	53.0	56.3	65.5	70.0	72.5	72.5	68.5
	29	63.5	59.5	60.3	66.9	72.5	74.0	75.0	68.5
	30	66.5	63.0	64.5	70.0	74.5	74.5	70.4	66.5
	31	65.5	63.0	63.5	71.0	72.8	75.5	74.5	69.5
Hourly means.		53.2	51.2	51.2	56.8	61.2	62.5	60.0	56.5

Mean Time.		0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.		°	°	°	°	°	°	°	°
June	1	71.0	70.0	69.5	69.3	76.7	77.2	62.0	58.8
	2	56.0	50.0	49.5	56.6	58.5	61.8	58.0	58.5
	3	55.5	55.0	56.0	58.3	58.8	60.0	61.0	60.3
	4	60.5	59.5	60.0	63.5	67.1	71.5	74.0	69.0
	5	67.0	65.5	67.5	71.8	79.5	78.0	72.0	71.0
	6	70.6	70.0	72.0	72.8	75.0	77.6	77.0	74.0
	7	71.5	71.6	72.0	77.0	78.0	80.5	81.5	66.5
	8	74.5	73.0	72.6	79.5	83.5	82.0	79.4	78.0
	9	76.0	73.5	72.6	80.5	82.0	84.3	83.0	76.8
	10	75.5	73.5	72.6	78.0	79.5	78.5	76.0	73.6
	11	72.2	67.2	67.2	71.5	71.8	74.5	75.5	74.8
	12	73.5	69.5	69.0	75.7	83.5	75.3	76.2	67.5
	13	63.5	60.5	60.0	63.5	69.5	72.0	60.0	54.5
	14	54.2	52.0	51.2	61.0	63.5	65.5	66.5	59.0
	15	58.9	57.5	56.0	63.5	68.0	69.5	65.5	62.5
	16	50.8	59.6	61.0	68.5	70.0	70.5	71.5	69.5
	17	68.6	68.0	68.0	71.6	71.0	71.0	67.5	64.5
	18	60.8	61.0	64.0	70.2	71.5	76.4	75.0	65.0
	19	61.3	57.3	58.0	69 0	76.0	78.0	78.7	70.0
	20	66.2	62.0	61.5	71.0	73.0	73.0	70.0	66.5
	21	66.0	63.5	64.5	68.5	70.0	71.1	70.0	67.0
	22	64.5	64.5	63.5	72.0	75.3	78.0	77.0	71.8
	23	69.0	68.0	66.5	75.8	77.7	78.5	76.0	73.0
	24	76.5	73 5	73.0	75.5	77.0	78.0	75.5	71.0
	25	66.5	62.0	61.0	66.6	70.0	72.5	74.5	75.0
	26	71.0	69.5	71.6	77.0	75.5	80.5	76.0	73.5
	27	74.0	69.5	71.0	74.5	76.0	75.8	76.0	74.5
	28	72.5	73.5	73.6	75.0	79.0	82.0	79.5	76.8
	29	76.5	75.5	74.0	81.0	84.0	84.5	77.7	73.5
	30	72.7	71.0	71.5	69.7	70.0	71.5	73.6	70.0
Hourly means.		67.5	65.5	65.6	70.9	73.6	74.9	72.8	68.8

Mean Time.		0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.		°	°	°	°	°	°	°	°
July	1	67.0	64.0	66.0	68.0	73.5	76.5	74.8	73.0
	2	70.5	70.0	72.2	75.0	78.2	79.5	79.0	76.5
	3	69.9	63.5	62.6	65.0	72.3	73.5	72.0	67.5
	4	65.0	64.0	64.5	75.0	76.5	75.5	74.0	69.0
	5	69.0	68.8	68.2	71.8	71.0	71.0	68.5	66.0
	6	63.2	62.5	62.5	67.5	69.0	71.0	70.5	65.0
	7	64.5	64.5	65.5	69.0	71.2	74.0	72.5	71.5
	8	68.6	68.0	68.2	71.0	78.0	78.0	76.0	71.0
	9	70.6	69.5	69.4	75.5	79.4	81.5	79-5	77.6
	10	72.0	71.0	71.0	78.5	80.3	77.6	77.5	75.0
	11	73.8	72.5	73.6	75.4	78.5	75.5	73.8	73.5
	12	72.0	71.5	71.0	73.5	74.5	72.2	72.5	71.0
	13	70.5	70.0	70.0	72.5	75.0	75.3	73.5	72.5
	14	71.2	69.2	69.2	73.5	74.5	76.5	75.0	72.0
	15	70.5	69.6	70.0	78.0	78.5	79.0	76.8	74.0
	16	72.2	69.0	69.5	78.0	78.2	76.5	77.5	71.0
	17	66.0	61.0	61.2	65.5	69.0	71.0	69.0	66.8
	18	66.0	62.0	64.0	71.0	72.8	74.0	70.0	69.0
	19	66.5	64.5	65.0	73.7	74.0	76.5	72.5	70.6
	20	68.0	65.0	65.0	74.0	77.5	77.0	74.5	72.2
	21	70.0	72.5	72.6	72.8	73.5	71.5	69.2	68.0
	22	67.5	63.8	63.5	68.0	69.7	70.0	69.0	66.8
	23	64.5	69.0	62.0	71.0	68.0	70.5	67.4	65.2
	24	64.3	65.0	66.0	70.0	72.0	72.7	68.0	66.0
	25	65.2	64.0	65.6	72.2	75.5	75.5	69.5	68.0
	26	67.5	68.0	68.2	73.5	74.5	73 0	71.5	68.5
	27	69.0	68.8	68.8	70.0	71.0	70.6	69.5	69.0
	28	69.0	69.4	70.5	72.0	74.5	71.5	72.0	70.6
	29	70.5	69.2	70.0	71.0	70.0	69.0	68.5	64.0
	30	63.0	61.6	60.0	65.0	68.0	79 0	68.0	66.0
	31	63.0	61.2	62.0	70.0	73.4	74.0	72.5	69.3
Hourly means.		68.0	66.8	67.0	71.8	73.9	74.4	72.4	69.8

Mean Time.		0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.		°	°	°	°	°	°	°	°
August	1	68.0	67.0	67.5	75.0	76.0	76.5	76.6	71.5
	2	69.0	69.0	67.5	68.2	69.7	69.8	67.0	65.0
	3	63.0	62.0	59.5	64.5	65.2	66.4	60.0	60.5
	4	59.8	61.0	57.0	61.8	66.0	67.2	66.5	62.5
	5	59.8	57.5	55.5	62.5	62.2	66.5	63.0	64.0
	6	62.0	60.5	61.5	67.8	69.8	69.7	67.2	66.8
	7	66.0	66.0	64.0	67.0	68.2	69.0	68.2	68.5
	8	69.0	68.8	69.5	71.0	72.6	71.8	70.7	68.4
	9	65.5	64.5	62.5	69.7	71.0	71.8	69.5	67.0
	10	64.0	62.5	62.2	69.0	72.0	75.0	71.0	67.8
	11	65.5	65.0	63.5	71.0	72.0	77.5	74.7	71.2
	12	67.6	66.0	64.0	75.5	75.5	77.5	76.3	71.5
	13	70.3	70.4	70.5	74.5	78.5	78.0	76.6	70.8
	14	67.0	64.9	63.0	68.5	70.5	72.5	69.8	67.2
	15	65.5	64.8	61.6	68.0	68.5	71.5	66.5	64.5
	16	61.5	58.5	57.3	67.0	68.5	70.2	67.0	65.0
	17	62.5	58.2	58.0	66.0	67.5	68.0	66.0	62.5
	18	62.2	59.0	57.5	69.0	73.6	75.5	73.5	70.0
	19	68.9	64.8	63.5	69.6	68.5	74.2	71.0	69.0
	20	68.0	67.5	68.0	75.2	80.0	78.0	78.5	72.5
	21	70.5	68.8	67.3	75.3	76.5	76.0	74.5	71.0
	22	73.3	69.5	69.4	72.0	75.0	73.5	66.2	64.8
	23	63.5	63.0	63.5	65.5	66.2	64.5	63.0	62.6
	24	62.5	61.0	59.5	61.0	62.5	63.5	64.0	63.5
	25	63.0	63.0	63.0	65.0	65.6	64.3	63.0	62.2
	26	58.0	57.0	55.0	62.0	60.0	63.0	59.0	57.5
	27	55.7	55.0	53.0	61.6	61.0	60.8	67.5	57.0
	28	55.5	52.5	50.1	63.0	63.0	69.5	65.5	61.0
	29	56.7	53.8	50.5	63.0	70.0	68.0	68.0	57.0
	30	53.0	50.5	50.5	62.5	64.0	65.8	65.0	63.6
	31	64.2	64.6	61.6	64.0	67 5	69.3	66.0	62.0
Hourly means.		63.9	62.4	61.2	67.4	69.2	70.4	68.4	65.4

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.	Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.	°	°	°	°	°	°	°	°	1874.	°	°	°	°	°	°	°	°
September 1	59.5	58.0	58,8	67.5	70.5	71.0	68 0	65.0	October 1	46.5	44.6	44.2	52.5	57.0	59.5	55.3	51.8
2	61.0	58.6	57.0	65.5	70.0	70.0	67.5	64.2	2	51.5	51.8	51.2	58.4	67.5	66.5	55.0	51.5
3	62.5	60.0	59.5	69.7	73.5	73.0	70.8	67.0	3	49.6	46.0	44.0	54.8	59.3	61.0	56.6	53.5
4	66.2	62.6	61.0	63.0	67.5	67.5	63.5	63.5	4	53.8	51.5	50.0	53.0	55.2	54.5	51.0	46.5
5	64.2	64.0	65.5	69.5	73.0	73.0	70.8	67.6	5	44.0	41.5	41.0	47.0	59.0	63.0	49.0	47.0
6	67.5	67.0	66.5	71.0	73.5	74.5	74.0	70.5	6	43.8	42.5	41.6	51.0	54.0	56.0	55.5	55.0
7	69.0	67.5	66.5	70.2	72.3	72.0	75.5	68.2	7	55.4	55.5	55.2	57.5	64.5	64.0	61.5	59.5
8	66.5	65.0	64.0	64 3	74.5	77.0	67.5	67.0	8	60.5	60.5	60.0	63.0	64.6	65.6	63.5	60.5
9	66.5	66.0	61.8	66.5	68.0	67.3	64.5	62.5	9	59.3	55.5	52.5	57.6	62.4	62.0	58.5	56 5
10	61.0	60.0	55.5	66.2	68.5	69 5	68.0	64.8	10	56.5	60.0	61.5	63.4	63.8	64.5	59.0	56.4
11	62.5	61.0	59.0	67.5	76.2	78.0	74.0	72.0	11	53.8	53.0	52.0	58.5	62.6	63.0	57.5	54.5
12	69.0	66.5	66.0	73.5	78.8	77.5	74.5	72.0	12	50.5	47.5	45.5	50.0	49.2	52.4	47.5	44.0
13	71.0	69.5	69.5	71.8	72.0	72.5	70.6	69.8	13	43.5	45.0	43.5	45.0	46.0	43.6	41.0	38.0
14	69.0	68.5	68.0	69.3	70.5	69.6	67.5	66.5	14	36.5	35.5	35.0	42.0	46.0	48.0	42.0	37.5
15	67.0	67.5	67.0	71.6	72.5	71.5	70.2	69.0	15	36.0	33.5	33.5	41.8	52.9	53.8	47.5	44.5
16	68.5	69.8	70.5	70.0	69.7	71.5	69.4	67.0	16	42.0	39.5	37.5	44.5	50.8	55.6	50.6	43.5
17	66.8	65.8	66.5	65.5	69.0	69.5	67.8	66.0	17	41.5	40.8	40.3	48.5	56.5	61.5	57.0	55.2
18	64.5	63.0	62.0	67.6	78.0	74.5	70.2	67.8	18	53.5	51.6	47.2	52.2	52.5	52.0	46.5	43.4
19	66.0	63.5	64 5	70.5	73.0	73.0	70.2	70.0	19	41.4	40.0	36.0	42.5	49.0	51.5	45.5	40.5
20	70.5	71.5	70.0	72.0	64.5	62.0	62.5	59.3	20	38.2	37.0	36.7	44.0	57.5	56.0	49.0	45.5
21	54.5	52.2	50.2	55.0	58.7	61.5	57.0	56.0	21	42.5	40.0	38.0	48.0	59.7	63.0	55.3	49.0
22	53.6	51.0	49.0	57.8	60.5	61.5	60.3	55.0	22	46.0	42.8	42.0	49.0	59.5	61.5	59.0	53.5
23	54.0	50.2	50.0	61.0	64.5	68.0	64.4	60.0	23	49.0	45.5	45.0	53.0	63.6	62.4	57.0	54.0
24	58.3	57.2	56.1	64.8	68.0	68.0	65.8	61.2	24	50.2	51.5	52.2	54.0	58.6	59.8	59.0	57.0
25	59.0	56.8	55.5	65.5	68.5	69.5	65.8	62.0	25	56.5	55.0	54.2	53.5	57.2	57.8	54.5	49.5
26	60.5	57.5	55.8	64.0	71.3	69.0	67.0	63.0	26	47.0	44.2	43.0	50.0	60 2	61.0	55.5	50.0
27	61.5	59.5	57.0	66.3	69.5	68 2	65.0	64.0	27	46.0	42.0	42.0	50.5	61.0	67.4	61.5	56.0
28	64.0	64.0	63 5	68.5	67.5	66.0	65.6	62.0	28	54.2	56.6	50.0	57.0	61.0	63.0	59.5	54.8
29	61.4	58.8	57.0	58.8	58.2	60.5	57.0	53.0	29	54.0	49.5	48.0	56.5	68.0	72.0	65.5	63.5
30	51.0	48.0	50.0	57.6	55.5	56.0	52.0	48.0	30	61.5	59.0	56.0	52.3	54.5	54.0	47.0	41.0
									31	37.8	35.0	32.5	36.6	46.5	43.4	37.5	34.0
Hourly means.	63.2	61.6	60.7	66.4	69.2	69.4	66.8	64.1	Hourly means.	48.4	46.9	45.5	51.2	57.4	58.7	53.5	49.9

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.	Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.	°	°	°	°	°	°	°	°	1874.	°	°	°	°	°	°	°	°
November 1	31.5	31.0	29.0	35.0	42.3	42.6	37.5	34.6	December 1	20.0	19.0	18.5	24.5	30.4	33.5	31.2	30.2
2	34.0	31.5	29.5	33.0	43.4	45.3	39.5	36.0	2	30.5	30.5	30.5	36.5	50.5	50.7	45.9	42.5
3	33.5	31.5	30.0	35 0	48.9	49.8	44.5	37.0	3	40.5	36.0	38.0	42.5	55.0	56.4	52.8	51.0
4	35.0	33.2	33.5	40.0	52.5	55.0	50.5	44.6	4	47.5	45.0	41.5	41.0	41.5	40.5	34.2	30.6
5	41.5	43.0	46.0	49.6	54.2	57.0	52.5	51.5	5	29.0	26.0	21.5	28.0	37.0	37.5	33.6	31.0
6	51.5	52.0	49.0	54.3	61.7	59.0	52.0	44.5	6	30.0	28.8	28.8	30.8	40.0	41.0	40.0	39.5
7	42.0	41.0	37.5	44.0	52.5	53.9	47.5	40.0	7	39.0	38.5	38.2	38.0	43.0	42.4	40.5	38.0
8	40.5	38.6	36.0	43.0	53.0	55.7	50.0	47.5	8	35.2	34.0	33.8	31.9	31.5	31.9	28.5	27.5
9	48.5	48.5	51.2	56.5	57.5	61.0	57.5	50.0	9	26.0	26.0	25.3	30.2	37.0	40.0	36.0	32.5
10	47.0	44.5	39.0	44.7	57.0	57.8	55.5	53.2	10	32.5	29.0	29.0	31.0	37.0	36.0	35.0	35.5
11	51.6	50.0	51.0	56.7	62.0	48.7	46.8	43.3	11	34.2	34.0	33.2	35.5	39.5	36.9	31.5	30.0
12	45.0	38.0	35.2	38.5	42.5	40.5	37.0	32.0	12	28.8	27.6	28.0	29.7	33.0	34.0	33.4	32.5
13	31.5	30.0	30.2	34.3	38.0	36.5	33.5	29.0	13	30.5	27.5	27.2	30.6	38.5	42.6	41.5	42.0
14	28.0	26.5	24.0	27.5	35.5	34.7	29.0	28.0	14	41.5	43.0	43.2	42.5	42.0	35.2	31.6	35.6
15	26.0	27.0	27.2	30.6	39.5	42.0	42.0	40.5	15	23.0	23.0	. .	. .	24.0	28.5	24.6	21.5
16	35.0	33.6	32.0	37.5	47.2	48.0	41.8	36.2	16	. .	. .	. .	24.8	34.5	35.0	33.0	33.5
17	34.5	34.5	37.4	40.5	49.5	52.0	51.0	49.5	17	32.5	32.5	33.2	33.8	42.0	40.7	38.0	36.2
18	49.8	49.0	49.0	51.0	60.0	56.0	52.0	47.5	18	34.5	36.0	38.5	27.6	32.5	35.0	30.6	29.2
19	41.2	39.0	36.8	37.0	42.0	38.2	37.0	37.5	19	28.0	28.5	26.5	29.3	41.2	42.2	36.0	31.0
20	36.2	37.0	36.0	36.5	42.5	45.0	45.0	41.0	20	32.0	32.0	34.0	35.0	35.2	37.0	35.5	36.0
21	37.0	35.0	31.0	32.0	33.5	36.0	32.5	29.5	21	35.0	33.5	30.5	30.5	34.5	35.5	30.8	28.0
22	28.5	27.5	27.7	32.0	36.3	39.5	39.5	42.5	22	28.0	28.3	31.0	34.5	39.5	41.8	40.5	37.0
23	45.3	46.5	52.7	54.0	58.6	54.2	47.0	39.5	23	34.0	33.9	33.5	34.5	43.0	43.5	38.2	35.3
24	36.0	35.0	32.5	36.0	40.5	39.5	34.0	32.6	24	35.0	32.0	30.5	32.0	36.5	30.0	31.6	29.0
25	31.5	30.0	25.8	28.0	33.6	34.0	30.2	28.0	25	29.5	28.0	26.5	27.5	33.8	35.0	30.5	26.8
26	27 0	25.0	24.0	27.4	34.5	36.0	32.8	30.5	26	25.5	27.4	30.0	33.7	35.5	37.0	37.0	37.5
27	29.5	29.5	29.0	33.0	44.0	46.2	40.5	36.0	27	40.0	39.0	35.0	35.0	40.0	43.0	42.5	42.5
28	37.0	30.6	32.5	35.5	49.0	54.2	50.5	48.0	28	44.0	44.6	44.2	49.6	57.5	62.0	59.0	56.5
29	49.6	54.4	39.8	33.4	36.0	38.0	32.5	30.0	29	55.2	53.8	54.2	48.0	43.0	41.5	37.0	32.5
30	30.5	30.0	25.0	25.0	. .	27.0	23.0	21.0	30	28.0	24.0	23.0	23.5	32.0	32.0	31.5	30.6
									31	25.5	22.8	21.4	. .	27.0	30.0	25.5	22.5
Hourly means.	37.8	36.7	35.3	38.7	46.4	46.1	42.1	38.7	Hourly means.	33.1	32.1	32.0	33.5	38.3	38.9	36.0	34.3

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.	°	°	°	°	°	°	°	°
January 1	31.0	32.5	32.0	52.2	52.0	46.6	37.5	36.0
2	38.0	40.0	40.5	45.0	71.0	104.0	62.0	42.0
3	41.6	40.0	38.0	53.0	110.5	110.0	57.5	51.5
4	51.5	50.0	49.0	60.0	113.0	82.0	55.5	55.0
5	54.0	53.5	53.0	54.5	62.2	58.5	38.0	35.0
6	35.0	34.0	34.0	37.0	44 0	47.0	45.1	50.0
7	52.5	55.0	57.0	58.5	81.0	114.5	80.0	53.0
8	50.0	46.0	41.0	40.0	70.0	102.0	64.0	29.5
9	26.5	25.0	25.0	55.0	100.0	69.5	39.5	38.5
10	37.0	36.0	33.5	36.0	109.0	61.0	34.0	39.0
11	30.5	29.0	26.0	49.5	66.5	61.0	31.5	29.0
12	26.0	25.0	25.5	35.5	95.0	54.0	27.5	28.0
13	23.5	24.5	25.0	35.5	44.0	34.0	28.5	29.0
14	29.0	27.5	28.0	29.0	83.5	64.0	25.0	23.5
15	18.0	15.0	10.0	24.5	99.0	99.0	9.5	9.5
16	7.8	8.0	7.0	20.0	99.5	48.0	10.0	9.0
17	10.0	8.0	4.5	15.0	100.3	51.5	16.5	17.5
18	10.5	8.0	6.0	43.0	105.0	52.0	33.0	30.0
19	29.5	31.0	32.5	37.5	61.0	49.0	50.0	39.0
20	37.5	37.0	35.0	41.0	99.6	103.0	53.0	36.5
21	34.5	33.0	34.5	41.0	58.0	61.0	58.0	44.0
22	44.5	46.5	48.5	52.0	97.0	109.0	82.0	59.0
23	58.5	57.5	61.0	70.0	110.6	123.0	99.5	49.5
24	40.0	32.5	26.5	45.0	101.5	101.0	54.5	35.5
25	27.0	24.0	18.0	26.0	90.0	63.0	20.0	18.5
26	15 5	15.0	14.0	22.0	64.0	43.6	27.0	32.5
27	33.0	33.5	34.0	45.0	52.0	46.0	38.5	39.2
28	42.0	43.0	44.5	50.0	108.0	67.0	41.0	41.0
29	33.0	32.0	30.0	47.0	103.5	62.5	37.0	33.5
30	32.0	31.0	30.0	49.5	84.0	100.0	68.0	32.0
31	30.0	29.0	28.2	39.2	47.0	84.0	56.0	34.0
Hourly means.	33.2	32.3	31.3	42.2	83.2	73.2	44.5	35.4

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3 .	6h.	9h.
1874.	°	°	°	°	°	°	°	°
February 1	29.5	30.0	26.0	39.5	50.0	44.0	31.0	26.0
2	25.5	22.0	20.0	43.0	43.0	40.0	29.0	27.0
3	27.0	27.5	27.6	. .	70.5	98.5	69.0	34.5
4	33.0	32.0	26.0	33.0	94.0	95.5	68.0	27.0
5	23.0	18.0	27.0	41.0	107.0	103.0	60.5	26.0
6	27.0	27.6	25.0	31.0	36.0	29.0	26.0	23.0
7	22.5	22.0	21.0	42.0	66.8	71.0	57.0	27.0
8	22.0	24.0	15.0	31.0	104.0	105.0	61.0	23.5
9	15.0	14.0	16.8	40.0	86.8	98.0	60.0	29.5
10	28.0	24.5	23.0	33.0	97.0	98.0	77.0	26.8
11	22.0	25.0	29 5	46.0	103.7	105.0	81.0	34.5
12	31.8	29.0	25.2	37.0	102.0	103.0	70.0	35.0
13	34.5	36.5	38.0	46.0	56.0	56.0	56.0	47.5
14	55.0	53.0	56.5	45.0	110.0	111.0	82.5	39.0
15	35.0	30.0	27.5	38.0	106.0	107.0	71.0	43.0
16	38.5	37.0	37.5	46.9	113.0	116.0	115.0	45.0
17	37.5	31.0	25.5	35.0	100.0	103.0	71.0	31.5
18	24.5	24.0	19.0	33.0	87.2	55 0	85.0	22.5
19	21.0	24.5	25.5	36.5	50.6	43.2	35.0	35.0
20	35.5	36.0	36.0	46.0	114.0	112.0	86.5	50.5
21	47.0	45.0	44.0	61.6	121.5	125.8	120.0	61.0
22	56.0	53.0	57.0	69.0	121.0	126.0	110.0	65.0
23	60.0	58.0	55.0	67.0	125.0	129.0	103.0	58.0
24	50.0	44.5	32.5	44.0	53.5	66.0	55.0	32.0
25	31.0	29.0	28.0	34.0	43.0	50.0	44.0	27.0
26	25.0	14.0	16.0	33.5	113.0	113.5	92.5	27.0
27	30.0	30.0	24.0	43.5	111.0	107.0	96.8	36.0
28	29.0	25.5	23.0	46.0	86.0	92 0	84.0	31.0
Hourly means.	32.7	30.9	29.5	41.5	88.2	89.3	71.3	35.3

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.	°	°	°	°	°	°	°	°
March 1	27.0	26.0	24.0	40.0	105.0	109.0	104.0	42.5
2	32.5	30.5	26.0	43.0	112.5	115.0	110.5	45.0
3	41.5	40.0	38.0	53.5	65.5	98.5	98.0	55 0
4	54.0	54.5	52.5	64.5	123.0	128.0	109.0	47.5
5	36.0	29 0	24.0	70.1	84.0	110.0	97.5	39.0
6	39.0	37.0	36.5	44.6	43.0	42.0	37.0	35.5
7	35.0	35.2	36.0	46.0	65.0	50.0	42.5	41.0
8	38.0	29.0	31.0	98.0	103.1	105.0	41.0	39.0
9	37.0	31 0	25.0	89.0	85.0	54.0	35.0	32.0
10	32.0	31.0	30.0	86.0	106.0	98.0	43.0	37.0
11	34.0	30.0	29.0	92.5	105.0	98.0	36.0	31.0
12	24.5	22.5	31.0	65.0	76.0	67.0	32.0	26.0
13	24.0	22.0	22.0	72.0	99.0	89.5	78.0	28.2
14	23.6	23.0	24.0	87.0	102.2	104.5	99.5	29.5
15	28.0	24.0	21.5	84.0	102.0	92.0	40.5	41.0
16	34.0	33.5	35.2	41.0	54.0	54.0	47.5	39.0
17	39.0	38.0	41.0	58.0	68.5	114.0	113.0	56.5
18	51.0	50.0	49.5	62.0	69.0	92.5	100.0	58.5
19	52.0	51.0	51.0	65.0	109.0	107.0	119.0	66 0
20	56.0	52.0	49.0	49.0	67.1	111.5	109.0	43.0
21	35.0	37.0	34.5	62.0	111.0	108.2	48.0	48.0
22	41.0	35.0	41.0	104.0	120.0	122.0	114.0	39.0
23	46.0	47.0	40.0	100.3	110.0	99.5	64.0	31.0
24	24.0	21.0	18.5	90.0	104.5	96.0	38.5	21.5
25	18.0	16.0	18.5	97.3	115.0	116.0	112.0	50.0
26	42.0	41.0	43.0	63.0	79.0	109.2	111.0	54.0
27	47.5	43.5	40.5	96.5	117.0	118.0	118.1	51.5
28	44.0	45.0	44.0	106.0	114.0	118.0	113 0	53.0
29	42.5	42.0	41.0	95.0	112.2	121.0	106.5	33.5
30	29.5	30.5	31.0	72.0	115.6	115.2	55.0	60.0
31	44.0	39.5	38.0	41.0	41.0	42.0	40.0	35.2
Hourly means.	37.1	35.0	34.5	72.1	93.0	96.9	77.8	42.2

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.	°	°	°	°	°	°	°	°
April 1	32.0	31.0	29.8	37.0	53.0	39.5	40.0	37.5
2	33.5	33.0	33.5	60.0	61.5	65.0	43.0	43.0
3	35.0	31.5	34.0	103.0	121.0	120.0	114.0	52.5
4	40.0	37.0	33.0	86.0	116.5	114.6	102.0	37.0
5	27.0	24.0	21.5	70.5	87.5	109.0	66.0	37.5
6	38.0	39.0	36.2	103.0	125.0	126.0	121.0	61.0
7	49.0	48.0	50.0	63.0	99.0	127 1	120.5	62.0
8	43.0	45.0	44.5	65.0	121.0	121.0	98.0	51.0
9	49.0	49.0	47.5	54.0	59.0	49.0	48.0	42.0
10	40.5	39.0	38.0	75.5	112.0	119.0	72.0	44.0
11	36.5	33.0	29.0	104.0	119.5	116.0	56.5	42.0
12	31.5	24.0	22.0	99.0	110.0	112.0	108.5	47.2
13	23.0	19.0	22.0	102.5	113.5	111.5	51.0	36.0
14	37.5	38.0	38.5	78.0	63.0	62.0	58.5	51.5
15	52.0	53.0	55.0	73.0	121.0	86.0	113.5	63.0
16	57.0	50.0	48.0	53.0	67.5	63.0	58.0	46.0
17	42.5	41.0	42.0	48.5	62.0	62.0	62.0	43.5
18	41.5	39.0	40.0	64.0	113.5	69.2	65.5	46.0
19	41.0	40.0	44.0	51.0	64.0	60.0	48.0	43.0
20	43.2	44 0	45.0	54.0	60.0	65.5	65.0	60.0
21	56.0	49.0	54.0	83.0	153.0	120.0	53.0	39.5
22	39.0	39.0	44.0	87.0	108.1	104.0	54.0	43.0
23	46.5	43.8	47.0	51.5	56.0	55.5	49.0	45.5
24	42.0	58.0	42.5	89.0	130.5	129.5	53.0	52.0
25	49.0	47.0	46.0	46.0	49.0	53.5	47.0	42.0
26	39.0	38.0	42.0	90.0	126.0	126.0	107.5	49.0
27	48.0	37.0	32.0	110.0	126.0	118.0	58.0	40.5
28	38.5	38.6	46.0	73.0	120.5	70.5	50.0	47.0
29	40.5	34.0	32.5	40.0	117.0	86.0	50.0	31.0
30	30.5	29.0	33.5	109.0	123.0	127.3	53.0	47.0
Hourly means.	40.7	38.3	39.1	74.0	98.6	92.9	69.5	46.0

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.	Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.	°	°	°	°	°	°	°	°	1874.	°	°	°	°	°	°	°	°
May 1	45.4	44.0	47.5	69.5	93.5	91.5	66.0	60.0	June 1	71.0	70.0	71.0	129.0	143.0	140.5	138.0	72.5
2	57.0	53.0	51.0	55.5	6 .0	60.0	49.0	47.0	2	57.0	48.0	66.0	127.0	130.0	129.5	68.0	58.0
3	44.0	42.0	42.5	80.0	103.0	119.0	64.5	38.0	3	56.0	56.0	61.0	74.5	63.5	64.0	61.0	59.5
4	36.0	36.0	41.0	53.6	56.0	50.0	44.0	44.0	4	60.0	59.0	63.0	80.0	111.2	128.5	94 0	66.5
5	43.5	44.0	46.0	57.6	61.3	69.0	57.0	44.0	5	64.0	63.0	68.0	90.2	144.5	95.5	76.0	69.0
6	41.0	38.0	39.0	95.5	115.0	108.0	58.1	51.0	6	70.0	70.0	72.0	75.4	104.0	143.0	88.0	70.0
7	43.5	41.5	40.0	109.0	120.0	107.6	60.5	39.0	7	69.0	69.0	76.0	134.0	143.0	143.0	90.0	74.0
8	36.0	36.0	43.0	64.0	103.0	90.0	07.0	56.0	8	76.0	70.0	78.0	136.0	136.0	134.0	91.2	79.0
9	53.0	53.0	56.0	117.0	133.0	122.0	79.0	59.0	9	73.0	68.0	76.0	140.7	151.0	147.0	113.0	75.2
10	58.0	50.0	57.0	122.5	140.0	139.0	77.5	60.5	10	70.5	68.0	96.0	138.0	146.0	84.0	78.0	72.0
11	57.0	52.0	57.5	128.5	136.0	117.2	60.0	48.5	11	71.0	67.0	71.0	87.0	80.0	100.0	87.0	73.5
12	45.0	44.0	50.2	63.0	125.5	124.5	115.6	65.0	12	74.5	69.0	75.0	138.0	155.3	150.0	138.0	79.0
13	51.0	49.0	59.0	77.2	124.0	105.0	69.5	59.5	13	56.0	54.0	64.0	119.0	137.0	135.0	72.5	51.0
14	57.0	52.0	63.0	103.2	126.0	107.5	76.0	60.0	14	49.5	47.0	57.0	118.0	136.5	137.5	74.5	59.0
15	59.0	53.5	63.8	105.5	94.5	70.0	64.0	60.0	15	55.0	52.5	59 0	128.0	140.0	141.0	141.0	82.0
16	57.0	55.0	59.0	75.0	124.5	87.0	65.2	62.0	16	65.0	60.0	69 0	120.0	139.2	139.0	97.5	77.5
17	62.0	61.0	61.0	121.5	133.0	140.8	140.2	68.0	17	71.0	66.0	72.0	119.0	144.0	144.0	144.0	82.0
18	61.0	58.0	57.0	91.5	139.0	141.0	140.5	61.0	18	62.0	60.0	95.0	139.0	143.0	144.2	144.8	86.0
19	50.0	47.0	47.0	120.0	131.0	132.0	126.0	63.0	19	64.0	54.0	82.0	129.0	144.0	133.0	86.5	66.0
20	50.0	46.0	56.5	72.5	81.0	122.0	122.0	65.0	20	66.0	59.0	73.0	130.0	146.0	146.0	130.0	74.0
21	48.0	46.0	51.0	119.0	136.0	118.0	62.0	63.0	21	66.0	64.0	64.0	113.0	141.0	144.0	133.0	132.0
22	43.6	42.0	47.0	121.0	129.5	124.5	64.0	47.5	22	64.0	63 0	65.0	131.5	148.0	150.2	144.0	69.5
23	44.0	41.5	46.0	119.5	107.0	92.0	69.2	60.0	23	65.0	63.5	66.0	135.0	149.0	145.1	90.0	72.5
24	60.0	58.0	59.0	69.0	107.0	92.0	68.2	60.0	24	77.0	74 0	72.0	127.5	116.0	147.5	95.0	70.5
25	60.2	60.0	62.0	76.0	137.5	140.0	78.0	69.0	25	65.0	64.0	74.0	129.0	141.0	140.5	93.0	80.5
26	62.0	58.0	60.5	128.0	140.0	140.0	86.0	69.0	26	69.0	67.0	76.0	117.3	103.2	143.2	85.0	71.5
27	49.0	46.0	68.0	121.0	142.5	142.2	129.0	70.0	27	73.5	65.0	92.0	134.0	99.0	103.0	91.0	74.5
28	56.0	53.0	82.0	130.0	139.0	141.0	138.0	74.0	28	69.0	72.0	78.0	97.5	143.0	142.0	116.5	73.5
29	64.5	56.0	64.0	125.0	144.0	144.0	140.0	78.5	29	73.0	72.0	75.0	140.0	150.5	148.0	96.0	77.0
30	66.0	63.0	88.0	137.0	139.0	140.0	133.0	77.0	30	72.8	71.0	76.0	110.0	84.0	105.0	84.5	66.5
31	66.0	63.5	66.0	132.0	140.0	144.2	132.0	76.0									
Hourly means.	52.4	49.7	55.8	98.7	118.1	113.6	87.1	59.8	Hourly means.	66.5	63.5	72.7	119.5	130.3	131.5	101.3	70.4

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.	Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.	°	°	°	°	°	°	°	°	1874.	°	°	°	°	°	°	°	°
July 1	64.0	61.0	70.0	127.0	140.2	138.0	88.0	72.0	August 1	69.0	65.5	69.0	125.0	139.0	139.0	90.0	79.0
2	67.0	66.0	74.0	100.0	130.5	113.0	91.2	75.0	2	71.0	68.0	67.5	131.8	151.0	150.0	146.0	84.0
3	76.5	66.0	66.0	132.5	145.0	142.0	98.5	68.0	3	63.0	61.0	59.5	130.5	146.0	148.0	141.0	98.0
4	62.0	61.0	67.0	130.0	146.5	144.0	91.5	67.5	4	63.0	60.5	60.0	124.5	142.0	147.5	146.6	93.5
5	70.0	67.0	70.0	112.0	146.0	146.0	120.0	92.0	5	59.5	57.0	55.0	129.0	145.0	146 0	143.0	79.0
6	60.5	60.5	67.5	129.0	143.0	146.0	137.0	110.0	6	65.0	62.0	64.0	130.0	145.1	150.0	134.0	87.0
7	65.5	65.0	70.0	114.0	140.0	141.5	141.0	95.0	7	69.0	68.0	69.5	95.5	101.0	78.0	86.0	71.0
8	69.0	66.0	76.0	124.0	146.5	148.2	148.0	88.5	8	69.0	67.5	71.0	82.0	109.8	150.0	131.0	82.0
9	71.0	69.0	72.0	135.0	147.0	150.0	147.0	90.5	9	69.0	66.0	64.5	134.0	149.0	153.0	47.0	90.5
10	81.0	73.5	77.0	138.0	151.0	156.0	146.0	106.0	10	64.0	63.0	66.0	109.2	141.0	153.2	139.0	74.0
11	75.0	72.0	76.0	134.8	144.5	154.0	134.0	79.0	11	64.5	63.0	66.0	127.0	144.0	149.5	140.5	93.0
12	72.0	69.0	74.0	110.0	135.0	148.2	105.5	85.0	12	68.0	66.0	65.0	127.0	146.0	150.5	142.2	84.0
13	70.0	69.0	74.0	133.0	155.8	153.2	143.5	84.0	13	71.0	71.0	71.0	128.0	150.0	150.0	145.0	95.0
14	68.2	67.0	70.0	133.0	147.0	145.0	89.0	69.0	14	74.0	70.0	67.0	131.0	154.0	151.0	144.5	86.0
15	67.0	65.0	71.0	138.0	157.0	146.0	90.0	71.5	15	70.0	68.0	64.5	132.0	152.5	160.0	149.0	84.0
16	69.0	65.0	89.0	139.0	125.0	91.0	84.0	72.5	16	60.0	58.5	58.0	129.5	145.5	147.0	147.0	82.0
17	66.0	56.5	62.0	130.0	142.8	140.0	79.5	63.0	17	68.0	59.0	58.0	132.0	145.0	146.5	142.0	80.0
18	62.0	59.0	83.0	137.5	144.5	141.5	93.5	65.0	18	62.0	59.0	56.0	135.0	150.0	151.2	151.0	85.5
19	61.0	59.0	66.0	132.0	145.5	142.5	89.2	68.5	19	72.2	69.0	71.1	127.0	144.6	146.0	146.0	85.0
20	63.0	60.0	66.0	136.5	144.0	144.5	89.0	70.0	20	74.0	67.5	67.0	138.0	156.0	160.0	156.0	92.0
21	74.0	70.0	70.0	80.0	81.5	78.5	69.0	67.2	21	77.0	71.0	68.0	138.0	157.0	158.0	154.5	89.0
22	67.0	60.0	65.0	129.0	143.5	141.0	84.5	63.5	22	79.0	75.0	73.5	94.5	138.0	98.0	85.0	70.0
23	60.0	58.0	65.0	129.5	144.0	140.0	80.0	65.5	23	67.0	66.5	66.0	92.0	80.5	73.0	72.0	64.5
24	66.0	65.0	77.0	130.0	135.0	116.0	78.5	70.0	24	62.0	61.0	60.0	69.5	84.0	91.0	72.3	67.0
25	70.0	66.0	72.0	132.5	147.0	148.0	141.0	87.0	25	64.8	62.0	63.0	112.2	101.0	135.0	97.2	66.0
26	74.5	68.0	71.0	122.0	144.0	124.0	102.5	82.0	26	60.0	56.0	56.0	121.0	136.0	136.2	129.0	66.5
27	71.5	69.0	70.0	79.0	97.5	85.0	76.0	71.5	27	54.0	52.0	54.0	121.5	123.0	136.0	129.0	65.0
28	74.5	70.0	77.0	83.0	119.0	118.0	137.5	82.0	28	53.7	50.0	47.5	123.0	138.2	142.0	138.5	69.0
29	73.5	69.0	71.0	87.0	87.0	122.0	118.0	78.0	29	57.0	53.0	49.0	118.0	138.0	139.0	142.0	68.0
30	64.0	61.5	61.0	130.5	144.0	145.0	141.0	83.0	30	53.5	51.0	51.0	119.5	152.0	151.6	126.6	74.0
31	63.0	59.5	75.0	133.0	146.5	147.0	144.0	85.0	31	65.0	64.6	63.5	71.0	110.0	141.0	135.0	68.0
Hourly means.	68.3	64.9	71.4	122.6	137.6	135.3	108.9	78.3	Hourly means.	65.7	62.9	62.6	118.6	135.9	139.6	127.4	79.7

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.	Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.	°	°	°	°	°	°	°	°	1874.	°	°	°	°	°	°	°	°
September 1	68.0	56.0	58.0	120.0	142.5	145.0	135.1	71.0	October 1	43.0	40.0	40.0	111.0	127.0	120.0	50.5	50.0
2	62.0	57.5	56.0	122.0	149.0	149.0	137.5	70.0	2	48.5	49.0	49.0	114.0	134.0	137.0	126.0	60.5
3	60.0	59.0	58.0	124.0	148.0	152.0	139.0	77.0	3	53.0	45.0	43.0	111.0	126.0	129.5	124.0	52.0
4	66.0	64.5	66.0	104.0	140.0	138.0	97.2	67.0	4	53.0	51.0	51.0	111.0	125.0	128.5	80.0	50.0
5	66.0	65.0	66.0	124.0	149.5	148.0	126.0	76.0	5	44.5	41.0	39.0	110.0	122.0	124.5	118.0	61.5
6	68.5	64.0	66.0	113.0	130.5	145.5	146.0	78.0	6	44.0	41.0	40.0	89.0	113.5	120.0	82.0	58.5
7	70.0	65.5	64.0	126.5	147.6	146 5	136.0	76.0	7	58.0	57.0	55.0	69.9	121.0	139.0	94.0	61.0
8	66.5	62.5	62.0	65.5	141.8	143.0	143.0	69.0	8	61.0	60.0	60.0	115.5	126.0	127.0	79.5	61.0
9	69.0	68.0	60.5	124.0	142.5	144.5	121.5	74.0	9	58.5	58.0	48.0	110.0	128.5	129.0	128.0	57.0
10	65.0	59.5	56.0	124.0	140.0	142.0	134.3	71.5	10	57.5	60.0	61.0	120.0	139.5	122.0	105.0	55.0
11	60.5	58.5	58.0	117.0	140.0	148.0	130.0	80.0	11	53.0	49.0	51.0	98.0	136.0	133.5	112.0	54.0
12	70.0	65.0	64.0	124.0	145.5	146.0	136.0	79.0	12	52.0	49.0	42.0	110.0	128.0	123.0	102.0	49.0
13	72.0	71.5	70.0	105.0	129.0	133.0	98.0	75.0	13	46.0	44.0	42.0	107.1	115.5	110.0	80.0	43.2
14	71.0	71.0	70.5	91.0	114.0	114.0	93.0	69.5	14	37.0	33.0	29.0	103.0	112.8	109.5	87.0	32.5
15	68.0	67.0	66.0	82.0	114.0	114.0	80.0	69.0	15	33.0	33.0	32.0	93.0	121.0	114.8	102.0	38.5
16	68.0	69.0	69.0	74.2	77.0	77.3	97.0	70.0	16	37.0	36.0	35.0	71.0	76.0	115.5	45.0	40.5
17	66.0	66.0	66.0	78.0	91.0	87.5	80.1	68.8	17	39.5	38.5	37.5	79.0	114.0	127.0	101.0	50.0
18	66.0	64.5	62.0	121.5	137.0	138.0	130.0	73.0	18	50.0	48.0	46.0	108.0	122.0	125.0	100.0	50.0
19	67.5	65.0	63.5	116.0	140.0	148.0	131.0	78.5	19	35.5	32.9	31.0	102.0	121.0	100.5	51.5	35.5
20	71.0	70.5	70.0	90.0	114.5	104.0	85.0	65.5	20	32.8	31.0	32.3	95.5	122.0	98.0	44.5	41.0
21	56 0	53.0	50.0	118.7	130.0	132.0	124.0	59.0	21	38.5	37.0	37.0	98.0	123.0	95.5	53.5	46.0
22	53.0	51.0	49.5	115.0	134.5	130.0	128.0	58.0	22	46.0	43.0	41.0	83.0	114.0	121.0	103.0	54.2
23	52.5	51.0	48.0	118.5	132.5	135.0	130.5	63.0	23	49.5	44.5	41.0	98.0	130.0	130.8	100.0	56.0
24	58.0	54.0	55.0	119.3	135.5	136.0	125.0	63.5	24	49.0	53.5	52.0	67.0	113.0	113.0	75.0	59.0
25	59.0	54.5	52.0	119.0	132.8	134.0	126.0	58.0	25	57.0	56.5	54.5	60.0	106.0	112.0	91.2	48.5
26	56.0	53.5	54.0	118.5	134.5	122.0	108.0	63.5	26	46.0	45.0	42.0	98.0	120.5	123.5	123.5	52.0
27	56.0	55.0	54.0	121.5	137.0	126.5	109 0	70.5	27	47.0	42.5	39.0	95.5	119.5	126.2	109.5	58.0
28	64.5	63.0	62.0	80.0	93.0	82.0	64.0	61.5	28	53.0	52.5	45.0	76.0	129.5	128.0	95.0	59.0
29	60.5	59.4	57.0	69.0	60.0	69.0	58.0	51.5	29	55.5	50.0	46.0	99.5	130.0	134.6	104.0	62.0
30	47.2	44.2	48.0	115.5	131.5	136.5	116.0	54.0	30	63.5	60.0	57.5	66.0	96.5	96.0	65.0	42.0
									31	40.0	32.0	27.0	60.0	83.5	49.5	38.0	29.0
Hourly means.	63.4	60.9	60.0	108.0	128.6	128.8	115.4	68.6	Hourly means.	47.8	45.5	43.4	94.5	119.2	118.1	89.3	50.5

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.	Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.	°	°	°	°	°	°	°	°	1874.	°	°	°	°	°	°	°	°
November 1	29.0	27.0	27.0	78.0	96.0	67.2	31.5	31.5	December 1	21.0	19.0	17.0	35.0	50.0	54.0	39.5	27.5
2	29.0	27.0	26.0	60.5	96.8	66.0	68.0	31.0	2	31.0	30.0	30.3	79.0	116.5	123.0	75.2	44.5
3	27.5	27.0	26.5	60.0	101.2	101.0	76.0	41.0	3	39.0	37.0	37.5	90.5	119.5	123.0	80.0	51.0
4	34.8	33.0	33.0	54.0	113.8	113.5	76.0	54.2	4	50.0	47.0	43.5	49.5	111.0	112.0	67.0	33.5
5	42.0	43.0	45.5	66.8	101.9	112.0	80.0	48.5	5	27.5	26.0	22.0	68.0	94.0	104.0	59.5	28.5
6	51.0	50.0	49.0	89.0	121.8	122.0	86.5	49.0	6	27.0	26.0	27.0	62.0	99.5	75.0	53.0	41.0
7	41.0	38.0	37.0	101.5	116.0	125.5	89.0	46.0	7	30.0	39.0	38.5	40.0	106.5	111.0	63.0	41.0
8	37.5	37.0	36.0	56.5	120.0	124.5	85.0	47.0	8	3 . .	3 .0	31.5	46.0	103.0	104.5	52.0	23.0
9	47.0	47.0	50.0	89.0	83.0	89.5	80.5	53.5	9	23.5	22.0	17.5	62.5	89.0	76.0	60.0	35.0
10	49.0	43.0	37.0	80.0	107.5	120.5	80.0	55.1	10	34.2	29.0	25.5	56.0	107.5	107.5	50.0	38.0
11	49.0	50.2	50.0	104.5	129.5	130.0	67.0	50.0	11	38.0	35.8	32.5	85.0	107.0	108.0	59.0	30.5
12	49.0	44.0	33.0	79.5	120.0	121.0	61.0	35.5	12	32.0	27.5	26.0	35.0	63.0	58.0	50.5	32.5
13	29.5	29.5	30.0	85.5	112.0	116.0	61.0	32.0	13	32.0	29.0	26.0	39.0	84.5	73.0	55.0	44.0
14	23.8	23.8	24.0	82.7	105.0	106.0	63.0	29.0	14	43.5	43.0	45.0	47.0	114.5	112.5	55.0	34.0
15	22.5	27.0	25.5	75.0	90.5	66.5	59.5	43.0	15	26.0	22.0	18.0	71.0	95.5	96.0	49.0	21.0
16	40.0	30.0	28.0	83.0	112.0	92.0	61.7	39.0	16	16.0	14.5	13.5	57.5	81.0	77.0	40.5	33.5
17	33.0	33.0	35.0	49.2	74.0	83.5	71.0	52.0	17	34.5	32.0	33.0	51.0	86.0	77.2	62.0	41.0
18	50.0	49.0	48.0	65.0	130.9	127.0	58.0	54.0	18	39.0	36.0	32.0	80.2	103.0	111.2	62.0	29.5
19	45.0	39.0	38.8	52.2	94.8	106.0	50.0	39.5	19	29.5	28.0	26.0	79.0	112.2	114.0	68.0	44.5
20	39.0	39.2	37.0	42.0	98.0	64.5	54.0	44.5	20	34.5	34.5	36.0	35.0	38.0	39.0	39.0	37.0
21	42.0	40.0	30.0	84.0	97.3	69.2	62.0	28.0	21	37.0	35.0	33.0	75.0	104.2	116.5	60.2	25.0
22	28.0	23.0	26.0	39.5	50.5	57.0	42.5	43.0	22	28.0	28.2	30.5	38.5	59.3	71.5	46.0	38.0
23	45.0	46.0	52.0	55.8	88.0	117.0	65.0	49.0	23	33.0	29.0	31.0	62.0	105.5	108.0	65.0	36.5
24	43.0	37.0	31.0	93.0	119.5	109.0	55.0	37.0	24	31.5	32.0	34.0	69.0	108.0	109.0	66.0	33.0
25	37.3	32.5	27.0	86.5	106.0	106.5	60.0	28.5	25	30.5	30.0	28.0	80.0	105.0	107.0	59.5	26.0
26	26.5	23.5	20.0	69.5	103.0	104.0	59.0	30.0	26	23.5	26.0	29.0	73.0	73.0	43.0	42.0	37.0
27	27.0	26.0	24.5	83.2	111.0	113.2	68.5	37.0	27	40.0	40.0	37.3	44.0	57.0	62.0	51.0	43.0
28	37.0	29.5	29.5	42.5	118.0	108.0	71.5	49.0	28	44.0	45.0	45.0	53.0	101.0	122.3	80.0	60.0
29	48.0	52.0	53.0	35.0	63.5	108.0	60.0	34.0	29	55.5	55.0	53.0	53.5	59.0	61.0	56.0	38.0
30	33.0	33.0	27.0	70.0	90.0	105.0	50.0	22.0	30	35.0	32.0	26.0	58.0	99.5	77.0	36.0	31.5
									31	28.2	25.5	21.0	50.0	96.5	99.0	64.0	20.0
Hourly means.	37.8	35.9	34.5	70.4	102.3	101.7	65.0	41.0	Hourly means.	33.5	31.9	30.6	58.8	91.9	91.3	56.9	35.4

MONTHLY MAXIMUM AND MINIMUM CORRECTED READINGS OF THE BAROMETER AT THE HOURS OF OBSERVATION IN 1874.

Month.	Day and Hour.	Maximum.	Day and Hour.	Minimum.	Range.
	d. h.	in.	d. h.	in.	in.
January	25 9 p.m.	30.610	8 3 a.m.	29.483	1.127
February	2 0	30.506	16 3 p.m.	29.610	0.896
March	24 9 a.m.	30.384	4 Noon.	29.490	0.894
April	13 9 a.m.	30.552	25 9 p.m.	29.388	1.164
May	12 6 a.m.	30.373	25 3 p.m.	29.499	0.874
June	14 Noon.	30.257	1 3 a.m.	29.494	0.763
July	14 9 a.m.	30.197	4 6 p.m.	29.666	0.531
August	26 9 a.m.	30.203	1 6 p.m.	29.590	0.613
September	24 9 a.m.	30.247	29 Noon.	29.413	0.834
October	24 9 a.m.	30.401	10 3 p.m.	29.621	0.780
November	14 9 a.m.	30.629	23 3 p.m.	29.160	1.469
December	31 9 p.m.	30.698	20 6 p.m.	29.532	1.166

	in.
Maximum for the year	30.698
Minimum for the year	29.160
Range for the year	1.538
Mean monthly range	0.926

TEMPERATURE FROM THE MAXIMUM AND MINIMUM THERMOMETERS IN 1874.

Day.	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
1	44.0	31.0	32.5	25.0	54.5	26.0	35.0	29.8	72.5	45.0	81.5	60.0	88.0	64.0	87.0	67.0	87.7	56.8	69.8	43.0	52.0	28.0	33.5	16.4
2	54.7	37.5	32.9	17.5	60.0	28.5	46.0	32.0	58.5	44.5	73.5	50.0	86.5	70.0	88.0	64.0	88.5	55.5	79.1	51.0	55.5	27.2	62.0	30.0
3	62.5	37.0	37.0	25.0	59.0	38.5	57.2	33.0	60.5	40.2	62.0	55.0	89.5	66.6	86.0	58.2	93.3	58.5	72.5	43.0	59.0	28.5	68.5	35.3
4	68.0	50.5	36.5	22.0	70.0	38.0	47.0	27.5	49.5	38.5	77.5	58.6	92.0	63.0	82.0	59.5	79.1	65.0	67.0	44.5	60.5	31.0	50.5	30.0
5	55.2	35.0	37.5	21.0	53.0	30.5	47.3	23.0	57.5	42.5	89.5	64.5	81.9	64.5	86.0	54.0	85.0	64.5	64.0	41.0	62.0	39.5	42.0	22.0
6	46.0	33.5	28.0	22.5	42.1	37.0	68.5	35.6	66.0	38.5	82.5	69.0	83.5	61.5	87.0	60.5	89.1	64.0	64.5	39.8	72.5	41.6	43.5	27.5
7	65.0	41.0	30.0	20.0	45.0	36.0	67.0	46.5	64.0	38.5	90.0	69.9	85.5	64.0	73.5	65.5	88.3	64.0	71.0	55.0	67.5	36.2	49.5	34.0
8	46.8	32.5	38.0	15.0	52.0	33.0	61.5	45.0	73.5	39.0	94.0	71.5	92.9	66.0	86.5	67.0	90.3	64.0	71.1	58.5	63.7	34.8	37.0	24.0
9	53.5	29.0	38.5	15.0	42.5	28.0	49.1	39.8	81.5	53.5	95.0	72.0	96.0	69.5	92.6	64.0	83.5	61.0	70.3	50.5	65.0	46.0	45.0	24.0
10	51.7	31.0	38.5	25.0	50.3	30.6	51.0	37.0	89.5	54.0	91.0	71.5	95.0	71.0	89.7	62.0	85.5	56.0	74.0	54.5	66.0	37.0	45.0	27.0
11	47.0	29.0	49.5	26.0	47.0	30.5	63.5	31.5	86.5	47.0	79.5	69.0	87.1	72.5	91.5	62.5	90.0	57.0	76.0	50.5	67.0	45.0	47.0	30.0
12	42.0	27.5	49.5	27.0	43.0	24.5	47.5	23.7	66.5	43.3	87.0	64.0	81.5	70.0	92.5	62.5	95.5	65.0	61.3	43.5	52.0	32.6	37.0	27.5
13	33.0	25.5	58.5	35.0	33.5	21.0	54.0	25.0	75.5	49.5	75.5	54.0	90.0	69.5	93.9	69.0	82.0	70.0	53.5	36.0	46.3	26.7	47.5	25.0
14	33.5	22.0	50.7	31.2	44.5	24.0	58.5	39.2	81.0	57.0	76.0	49.5	91.5	68.2	87.5	63.8	79.0	68.0	54.0	33.2	41.0	23.5	52.0	26.5
15	24.0	10.6	51.5	29.0	53.0	25.0	69.7	53.8	72.5	57.0	81.1	55.0	93.5	69.0	89.0	61.0	82.0	68.0	62.5	32.0	50.5	26.6	31.5	16.0
16	23.0	9.5	60.5	36.0	53.0	35.0	61.0	43.0	74.5	54.5	78.7	59.5	91.5	68.0	88.0	57.0	72.5	66.0	63.5	36.0	56.5	30.5	36.5	17.4
17	31.5	9.0	41.4	26.9	63.0	38.0	47.0	40.0	74.1	53.0	84.1	63.0	84.5	61.5	86.1	58.5	71.5	64.5	70.5	39.0	57.7	34.0	49.0	30.5
18	37.0	8.1	41.5	20.5	61.1	48.0	49.7	38.0	70.3	48.6	89.1	61.6	88.5	61.2	92.5	56.5	85.0	61.0	65.0	43.4	66.0	43.5	45.0	29.5
19	41.0	31.5	36.5	22.0	70.7	49.9	46.5	42.0	72.7	43.0	85.5	57.0	90.5	64.0	93.0	69.0	82.0	62.5	62 0	36.0	48.5	37.0	54.0	25.0
20	47.3	36.0	57.5	34.2	56.5	38.5	62.5	41.0	66.5	49.5	79.0	62.0	94.5	64.3	103.5	68.0	77.0	56.5	70.3	34.9	48.5	35.0	39.5	33.0
21	48.3	33.0	71.0	45.0	59.5	35.0	61.0	43.5	69.0	47.5	81.0	62.0	75.7	67.0	102.1	66.5	73.0	50.5	75.0	37.0	41.0	27.5	43.5	27.6
22	64.0	44.5	75.0	53.5	58.5	39.8	60.0	41.0	72.5	44.3	91.0	63.0	86.0	62.0	87.0	65.0	73.5	49.0	73.0	41.0	46.1	25.0	45.0	28.2
23	71.5	35.0	78.0	48.5	49.9	24.5	52.5	44.0	72.0	44.0	95.5	66.0	85.5	60.0	71.0	61.0	77.5	49.0	75.0	43.0	66.5	39.3	50.5	30.6
24	49.0	25.0	49.0	31.5	42.0	22.0	60.5	39.0	71.5	58.0	94.5	71.0	85.7	64.9	67.3	59.0	79.0	55.0	66.5	49.5	51.0	32.0	47.5	27.2
25	39.0	19.5	35.5	20.0	57.2	23.0	50.5	39.5	85.5	60.0	89.5	62.6	89.0	66.0	74.0	58.5	80.0	54.6	64.5	46.5	41.0	27.0	43.0	26.0
26	32.6	15.0	40.5	20.0	61.0	42.0	55.5	37.5	77.8	53.5	90.3	68.0	89.0	68.0	77.0	54.0	81.5	55.5	71.1	41.0	43.5	21.5	42.8	25.5
27	42.5	29.5	44.3	25.0	62.5	42.0	63.2	35.0	76.5	48.5	83.0	73.0	75.0	69.0	74.3	52.5	82.0	56.6	78.0	41.5	53.1	27.0	44.5	32.5
28	59.0	36.0	44.3	23.0	60.7	42.0	59.5	37.0	86.0	54.0	93.1	72.5	81.5	68.5	78.5	48.5	75.0	60.5	74.5	48.5	60.5	30.5	68.0	43.0
29	53.5	30.0	. .	. .	53.0	35.5	48.0	30.5	86.5	58.5	97.1	72.8	77.3	63.0	79.7	48.5	61.1	52.0	80.0	46.5	51.0	33.0	55.5	32.0
30	46.7	39.6	. .	. .	66.5	32.0	60.5	32.0	84.5	61.5	80.9	67.5	86.0	59.5	80.0	49.5	66.0	48.0	60.5	39.0	33.5	19.5	34.5	23.5
31	47.0	27.5	. .	. .	44.7	31.8	. .	. .	85.5	61.5	. .	. .	89.5	59.0	80.7	59.0	. .	. .	51.0	32.0	. .	. .	34.5	19.0
Mean.	47.1	29.1	45.9	27.2	53.8	33.2	55.4	36.8	73.6	49.3	84.9	63.8	87.2	65.7	85.4	60.4	81.2	59.3	68.1	42.9	54.8	32.2	46.0	27.3
Mean temp.	38.1		36.5		43.5		46.1		61.4		74.4		76.4		72.9		70.2		55.5		43.5		36.6	

Mean temperature for the year from the maximum and minimum thermometers, 54°.7.

MONTHLY MAXIMUM AND MINIMUM TEMPERATURES IN 1874.

Month.	Maximum.		Minimum.		Range.
	Day.	Temperature.	Day.	Temperature.	
		°		°	°
January	4	68.0	18	8.1	59.9
February	23	78.0	8, 9	15.0	63.0
March	19	70.7	13	21.0	49.7
April	15	69.7	5	23.0	46.7
May	10	89.5	4, 6, 7	38.5	51.0
June	29	97.1	14	49.5	47.6
July	9	96.0	31	59.0	37.0
August	20	103.5	28, 29	48.5	55.0
September	12	95.5	30	48.0	47.5
October	29	80.0	15, 31	32.0	48.0
November	6	72.5	30	19.5	53.0
December	3	68.5	15	16.0	52.5

	°
Maximum temperature for the year	103.5
Minimum temperature for the year	8.1
Range for the year	95.4
Mean monthly range	50.9

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1874. Jan. 1	0	S. by W.	2	C. K.	10	1874. Jan. 2	0	SW.	1	N.	10	1874. Jan. 3	0	SW.	1	C. K.	2
	3	S.	2	K.	10		3	SW.	1	N.	10		3	SW.	1	C. K.	8
	6	S.	1	C. K.	10		6	SW.	1	N.	10		6	SW.	1	C. K.	10
	9	S.	1	C. K.	10		9	SW.	1	K.	10		9	NW.	1	C. K.	8
	Noon	S.	1	K.	10		Noon	S.	1	C. K.	9		Noon	S.	1	C. S.	4
	3	SW.	1	N.	10		3	S. SE.	1	C. K. S.	2		3	S.	2	C. K. S.	7
	6	S. by W.	1	N.	10		6	S.	1	C. K. S.	2		6	S.	1	C. K. S.	2
	9	SW.	1	K.	10		9	W. SW.	1	C. K.	4		9	S.	1	C. K.	10
Jan. 4	0	S. by W.	1	Haze		Jan. 5	0	S. by W.	2	C. K.	9	Jan. 6	0	N. NE.	1	Mist	10
	3	S.	1	C. K.	8		3	SW.	2	C. K.	10		3	NE.	1	N.	10
	6	S. by W.	1	C.	4		6	NW.	2	K.	10		6	E. NE.	1	N.	10
	9	S.	1	C. K.	10		9	N.	2	C. K.	10		9	N. by E.	1	Mist	10
	Noon	S.	3	C. K.	4		Noon	N. by W.	1	C. K.	10		Noon	N NE.	1	N.	10
	3	S.	3	C. K.	3		3	N.	1	Mist	10		3	NE.	1	Mist	10
	6	S.	1	S.	1		6	NE.	1	Mist	10		6	NE.	1	N.	10
	9	S.	2	C. K.	8		9	NE.	2	N.	10		9	E.	2	N.	10
Jan. 7	0	SE.	3	N.	10	Jan. 8	0	SE.	1	C. K.	7	Jan. 9	0	W.	1	C. K. S.	2
	3	SE.	4	N.	10		3	SW.	2	K.	10		3	W.	1	Clear	0
	6	SE.	3	C. K.	9		6	SW.	3	K.	10		6	SW.	1	C. K.	4
	9	SE.	1	Mist	10		9	W.	1	N.	10		9	S. SW.	1	S.	1
	Noon	SE.	1	C. K.	10		Noon	W.	2	C. K. S.	10		Noon	S.	1	Clear	0
	3	E. SE.	1	C. K.	9		3	W.	2	C. K.	7		3	S.	2	S.	2
	6	S. SW.	2	C. K.	7		6	W.	2	C. K.	2		6	S.	1	C. K. S.	2
	9	S.	1	K.	10		9	W.	1	Clear	0		9	S.	1	Haze	
Jan. 10	0	S.	1	C. K.	6	Jan. 11	0	SW.	1	C.	3	Jan. 12	0	NW.	1	Clear	0
	3	S.	1	C. S.	1		3	NW.	1	Clear	0		3	NW.	1	Clear	0
	6	S.	1	C. K.	2		6	NW.	1	Clear	0		6	NW.	2	Clear	0
	9	W.	1	C. K.	2		9	S. by W.	1	C. S.	1		9	NW.	2	C. K.	4
	Noon	W.	3	C. K.	4		Noon	NW.	2	C. K.	4		Noon	W.	2	C. K.	6
	3	W.	2	C. K.	5		3	NW.	3	Clear	0		3	NW.	1	C. K.	9
	6	W.	1	C. S.	2		6	NW.	1	S.	1		6	NW.	2	C. K. S.	2
	9	SW.	2	C. K.	8		9	NW.	2	Clear	0		9	NW.	2	C. K.	10
Jan. 13	0	NE.	2	Haze		Jan. 14	0	N. NE.	1	Snow	10	Jan. 15	0	NW.	3	Clear	0
	3	NE.	1	K.	10		3	N.	1	K.	10		3	NW.	2	Clear	0
	6	NE.	1	C. K.	10		6	NW.	1	Snow	10		6	NW.	1	C. K.	6
	9	NE.	1	C. K.	10		9	NW.	1	C. K.	2		9	NW.	3	Clear	0
	Noon	E.	1	C. K.	10		Noon	NW.	4	C. K.	4		Noon	W.	4	C. K.	2
	3	E.	1	K.	10		3	NW.	4	C. K.	2		3	W. NW.	3	C. K.	2
	6	NE.	2	Snow	10		6	NW.	3	K.	2		6	W.	3	C. K.	2
	9	NE.	2	Snow	10		9	NW.	3	Clear	0		9	W.	3	C. K.	3

REMARKS.

January 1. Raining lightly at 2^h p. m.; amount, 0.330 inch.
6. Rain during the day; amount, 1.080 inches.
8. Rain at 9^h a. m.; amount, 0.320 inch.
13. Snow at 3^h 30^m p. m.; depth, 3.0 inches; amount of melted snow, 0.362 inch.

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1874. Jan. 16	0	W.	3	Clear	0	1874. Jan. 17	0	NW.	1	Clear	0	1874. Jan. 18	0	NW.	1	Clear	0
	3	W.	3	Clear	0		3	NW.	2	Clear	0		3	NW.	1	Clear	0
	6	W.	2	Clear	0		6	NW.	1	Clear	0		6	NW.	1	Clear	0
	9	W. NW.	3	S.	1		9	NW.	1	Clear	0		9	NW.	1	Clear	0
	Noon	NW.	3	Clear	0		Noon	N.	1	Clear	0		Noon	NW.	1	C. K.	3
	3	NW.	2	Clear	0		3	SE.	1	Clear	0		3	E. NE.	1	C. K.	10
	6	NW.	1	Clear	0		6	S.	1	Clear	0		6	E.	1	K.	10
	9	NW.	1	Clear	0		9	NW.	1	Clear	0		9	E.	1	C. K.	9
Jan. 19	0	E.	1	C. K.	10	Jan. 20	0	NW.	1	C. K.	10	Jan. 21	0	E.	1	K.	10
	3	E.	1	Haze			3	NW.	2	C. K.	10		3	NE.	1	N.	10
	6	E.	1	Fog			6	NW.	2	S.	1		6	SE.	1	K.	10
	9	S.	1	N.	10		9	N. NW.	1	C. K.	2		9	SE.	1	K.	10
	Noon	S. SW.	1	C. K.	10		Noon	N.	1	C. K.	4		Noon	S. by W.	1	C. K.	10
	3	S.	1	K.	10		3	E.	1	C. K.	10		3	S. by W.	1	C. K.	10
	6	W. NW	1	C. K. S.	10		6	SE.	1	K.	10		6	S. SW.	1	C. K.	9
	9	NW.	1	C. K.			9	E.	1	K.	10		9	S.	2	C. K.	9
Jan. 22	0	S.	2	C. K.	10	Jan. 23	0	S.	3	C. K.	10	Jan. 24	0	NW.	3	C. K. S.	8
	3	S.	1	C. K.	10		3	S.	1	K.	10		3	NW.	2	C. K.	6
	6	S.	2	K.	10		6	S. by W.	3	C. K.	10		6	NW.	1	C. S.	2
	9	S.	2	Mist	10		9	SW.	3	C. K.	9		9	NW.	1	C. K.	10
	Noon	S. SW.	3	C. K.	5		Noon	SW.	3	C. K.	8		Noon	S. SE.	2	C. K.	7
	3	S. SW.	3	C.	2		3	NW.	4	C. K.	8		3	W. NW.	2	C. K. N.	8
	6	SW.	2	C. K. S.	8		6	NW.	5	C. S.	2		6	NW.	3	C. K.	5
	9	S. by W.	3	C. K.	1		9	NW.	3	C. K. S.	7		9	W.	3	Clear	0
Jan. 25	0	W.	2	C. K.	1	Jan. 26	0	NW.	2	Clear	0	Jan. 27	0	S.	1	K.	10
	3	W.	3	C. K.	1		3	NW.	1	Clear	0		3	S.	1	K.	10
	6	NW.	2	Clear	0		6	NW.	1	Clear	0		6	S.	1	K.	10
	9	NW.	2	Clear	0		9	N.	1	C. K.	2		9	S.	1	C. K.	10
	Noon	NW.	3	C.	2		Noon	SE.	2	C. K.	7		Noon	S. by W.	1	N.	10
	3	N. NW.	3	C.	1		3	S. SW.	2	C. K.	6		3	SW.	1	N.	10
	6	NE.	1	C. S.	1		6	S.	1	C. K.	4		6	S. SW.	2	N.	10
	9	W.	2	Clear	0		9	S.	2	K.	10		9	S.	2	N.	10
Jan. 28	0	S. SW.	2	C. K.	10	Jan. 29	0	NW.	3	C. K.	7	Jan. 30	0	SW.	1	C. K.	8
	3	S. SW.	3	C. K.	10		3	NW.	1	C. K.	5		3	W.	1	C. K.	4
	6	S.	2	C. K.	10		6	NW.	1	S.	1		6	NW.	1	C. K.	10
	9	SW.	2	N.	10		9	W.	2	C. K.	6		9	W. SW.	1	C. K.	10
	Noon	W. SW.	3	C. K.	6		Noon	W.	2	C. K.	2		Noon	E.	2	C. K.	9
	3	NW.	3	C. K.	8		3	W.	1	C. K.	4		3	E.	1	Haze	
	6	NW.	3	C. K.	9		6	SW.	1	C. S.	3		6	E.	3	K.	10
	9	NW.	3	C. K.	2		9	SW.	1	Clear	0		9	E.	2	K.	10

REMARKS.

January 19. Rain at $6^h\ 20^m$ a. m.; amount, 0.190 inch.
21. Light rain at 3^h a. m.; lunar halo at $6^h\ 20^m$ p. m.
26. Lunar halo at 6^h p. m.
29. Lunar halo at 6^h and at 10^h p. m.

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1874. Jan. 31	0	NE.	1	K.	10	1874.						1874.					
	3	NE.	1	K.	10												
	6	NE.	1	K.	10												
	9	NE.	1	Haze													
	Noon	W.	1	K.	10												
	3	NW.	1	C. K.	10												
	6	NW.	1	C. K.	8												
	9	NE.	1	C.	3												
Feb. 1	0	N. NE.	1	C. K.	8	Feb. 2	0	NE.	2	K.	10	Feb. 3	0	N.	1	Sleet	10
	3	N. by E.	1	K.	10		3	NE.	2	K.	10		3	N.	2	Sleet	10
	6	NE.	2	K.	10		6	NE.	2	Snow	10		6	N.	2	N.	10
	9	NE.	2	K.	10		9	NE.	1	Snow	10		9	N. NW.	2	N.	10
	Noon	NE.	2	K.	10		Noon	NE.	1	Snow	10		Noon	NW.	1	C. K. S.	8
	3	NE.	2	K.	10		3	NE.	1	Snow	10		3	NW.	1	C.	2
	6	NE.	1	C. K.	9		6	N. NE.	2	Sleet	10		6	NW.	1	K.	10
	9	NE.	2	K.	10		9	N.	1	Sleet	10		9	NW.	1	K.	10
Feb. 4	0	NW.	1	K.	10	Feb. 5	0	NW.	1	C.	1	Feb. 6	0	N.	1	C. K.	4
	3	NW.	1	C. K.	10		3	W. NW.	1	C. K.	4		3	NE.	1	C. K.	8
	6	NW.	1	C. K.	2		6	W.	1	K.	10		6	N.	1	C. K.	10
	9	NW.	2	C K.	3		9	W.	1	C. K.	9		9	NE.	1	K.	10
	Noon	NW.	3	C. K.	2		Noon	W. NW.	2	C. K.	9		Noon	E.	1	Snow	10
	3	NW.	2	Clear	0		3	NW.	1	C. K.	7		3	NE.	1	Snow	10
	6	NW.	2	Clear	0		6	NW.	1	C. K.	4		6	NE.	2	Snow	10
	9	NW.	1	Clear	0		9	NW.	1	C. K.	9		9	NE.	2	Snow	10
Feb. 7	0	NE.	2	Snow	10	Feb. 8	0	NW.	1	C. K.	9	Feb. 9	0	NW.	1	C. K.	7
	3	N. NE.	1	K.	10		3	NW.	1	C. K.	10		3	W. NW.	1	C. K.	9
	6	N.	1	K.	10		6	NW.	1	Clear	0		6	NW.	1	C. K.	9
	9	NW.	1	Snow	10		9	N. NW.	1	Clear	0		9	NW.	1	C. K.	10
	Noon	NW.	1	K.	10		Noon	NW.	1	C.	4		Noon	NW.	1	C. K.	8
	3	NW.	1	K.	10		3	N. NE.	1	C. K.	8		3	SW.	1	C. K.	9
	6	NW.	1	K.	10		6	N.	1	C. K.	7		6	NW.	1	C. K.	10
	9	NW.	1	K.	10		9	N.	1	C. K.	4		9	NW.	3	Snow	10
Feb. 10	0	NW.	3	C. K.	5	Feb. 11	0	W.	1	Clear	0	Feb. 12	0	NW.	1	C. K.	2
	3	NW	2	Clear	0		3	SW.	1	Clear	0		3	NW.	1	C. K.	5
	6	NW.	3	C. K.	4		6	S.	1	C. K.	8		6	NE.	1	C. K.	4
	9	NW.	3	C K.	3		9	S. by E.	1	C. K.	8		9	NE.	1	C. K. S.	6
	Noon	NW.	3	Clear	0		Noon	S.	1	C. K.	2		Noon	W.	1	C. S.	4
	3	NW.	3	C.	1		3	S.	1	Clear	0		3	NE.	2	Haze	
	6	SW.	1	C. K. S.	8		6	W.	1	C. K.	8		6	E. NE.	1	Haze	
	9	W.	1	Clear	0		9	W.	1	C. K.	2		9	NE.	1	C. K.	7

REMARKS.

February 2. Snow at 4^h a. m., followed by rain; depth of snow, 3.25 inches; amount of melted snow and rain, 0.574 inch.
6. Snow at $11^h\ 35^m$ a. m.; depth, 4.25 inches; amount when melted, 0.704 inch.
9. Lunar halo at 2^h a. m.

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1874. Feb. 13	0	NE.	1	K.	10	1874. Feb. 14	0	SW.	2	C. K.	8	1874. Feb. 15	0	N.	1	C. K.	1
	3	E.	1	K.	10		3	SW.	2	C. K.	6		3	NE.	1	C. K.	2
	6	S.	1	K.	10		6	NW.	5	C. S.	3		6	NE.	2	C. K.	5
	9	S.	1	K.	10		9	NW.	3	Clear	0		9	SE.	1	C. S.	4
	Noon	S.	1	N.	10		Noon	NW.	2	C. K.	7		Noon	SE.	2	C. S.	2
	3	S.	2	K.	10		3	N. by W.	1	C. K.	8		3	SE.	1	C. K.	6
	6	SW.	1	K.	10		6	NW.	1	C. K.	9		6	SE.	1	C. K. S.	9
	9	S.	2	C. K.	9		9	NE.	1	C. K.	8		9	SE.	1	Haze	
Feb. 16	0	SE.	1	Haze		Feb. 17	0	W.	1	Clear	0	Feb. 18	0	NW.	1	Clear	0
	3	SE.	1	N.	10		3	NW.	2	Clear	0		3	NW.	1	C. K.	4
	6	S. SE.	1	C. K.	10		6	NW.	2	Clear	0		6	NE.	2	C. K.	4
	9	W.	1	C. K.	4		9	NW.	2	Clear	0		9	N.	1	C. K. S.	8
	Noon	W.	1	C. K.	1		Noon	NW.	2	Clear	0		Noon	E.	1	C. K. S.	8
	3	NW.	3	Clear	0		3	NW.	1	C. K.	10		3	NE.	1	Clear	0
	6	NW.	2	C.	1		6	N.	2	C. K.	10		6	E.	1	C.	1
	9	NW.	1	Clear	0		9	NW.	1	Clear	0		9	SE.	1	Clear	0
Feb. 19	0	E.	1	Clear	0	Feb. 20	0	SW.	1	K.	10	Feb. 21	0	S.	1	K.	10
	3	E.	1	Haze			3	SW.	1	K.	10		3	S.	1	C. K.	4
	6	N. NE.	1	Haze			6	SW.	1	K.	10		6	S	1	C. K.	6
	9	NE.	1	Mist	10		9	SW.	1	C. K.	10		9	SW.	1	C. K.	6
	Noon	SW.	1	Mist	10		Noon	SE.	1	C. K.	6		Noon	S.	3	C. K.	7
	3	SW.	1	Mist	10		3	SE.	1	C. K.	9		3	S. SW.	4	C. K.	6
	6	S.	1	Mist	10		6	E.	1	C. K.	9		6	S. by W.	1	C. K. S.	8
	9	SW.	1	K.	10		9	E.	1	C. K.	9		9	S.	1	C. K.	3
Feb. 22	0	NE.	1	Haze		Feb. 23	0	S.	1	C. S.	6	Feb. 24	0	NW.	3	C. K.	8
	3	NE.	1	Haze			3	S. SW.	2	C. S.	4		3	NW.	3	K.	10
	6	S.	1	K.	10		6	S. by W.	2	C. S.	4		6	NW.	3	C. K.	10
	9	S.	1	C. K.	8		9	S.	3	C. K.	4		9	N. NW.	3	C. K.	10
	Noon	S.	2	C. K.	7		Noon	SW.	4	C. K.	8		Noon	NW.	2	K.	10
	3	S.	3	C. K.	7		3	W. SW.	4	C. K.	8		3	NW.	1	K.	10
	6	S.	1	C. K.	10		6	NW.	3	C. K. S.	4		6	NW.	1	C. K. S.	10
	9	S.	1	Haze			9	NW.	4	C. K.	8		9	NW.	1	Haze	
Feb. 25	0	E. NE.	2	C. K.	10	Feb. 26	0	NW.	1	C.	1	Feb. 27	0	S.	1	C. K.	7
	3	NE.	2	Snow	10		3	NW.	1	Clear	0		3	S.	1	C. K.	8
	6	NE.	2	Snow	10		6	N.	1	C. S.	2		6	W.	1	C. K.	8
	9	NE.	2	Snow	10		9	NW.	1	Haze			9	W.	1	C. K.	10
	Noon	N.	2	Snow	10		Noon	W.	1	C. K.	2		Noon	W. NW.	4	C. K.	4
	3	NE.	2	K.	10		3	S.	1	Clear	0		3	NW.	2	C.	3
	6	NW.	1	Snow	10		6	S.	1	C. K.	2		6	N. NW.	1	Haze	
	9	NW.	1	Snow	10		9	S.	1	C. K.	8		9	NW.	1	Clear	0

REMARKS.

February 13. Light shower at noon ; amount, 0.190 inch.
16. Light rain at 2^h a. m.
21. Light shower at 1^h a. m.; amount, 0.064 inch.
22. A large lunar halo from 8^h to 9^h p. m.
25. Snow during the day ; depth, 6.25 inches ; amount when melted, 0.783 inch.
26. Lunar halo at 9^h p. m.

Day.	Hour.	WIND. Direction.	Force	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direct on.	Force.	Weather.	Portion cloudy.
1874. Feb. 28	0	NW.	1	C.	2	1874.						1874.					
	3	N. NW.	1	Clear	0												
	6	N. NW.	1	Clear	0												
	9	W.	1	Haze													
	Noon	S.	1	Haze													
	3	S.	1	C. K.	7												
	6	SW.	1	C. K.	8												
	9	S.	1	C. S.	6												
Mar. 1	0	S.	1	C.	1	Mar. 2	0	E.	1	Clear	0	Mar. 3	0	S. SE.	1	C.	1
	3	S.	1	Clear	0		3	E. NE	1	Clear	0		3	NW.	1	C. K.	8
	6	SE.	1	C. S.	2		6	W. NW.	1	Haze			6	NW.	1	C. K.	10
	9	SE.	1	Haze			9	NW.	1	Haze			9	SW.	1	Mist	10
	Noon	S. SE.	1	Clear	0		Noon	S.	1	Clear	0		Noon	W.	1	Mist	10
	3	SE.	1	Clear	0		3	S. SE.	1	Clear	0		3	W.	1	C. K.	9
	6	SE.	1	Haze			6	SE.	1	S.	1		6	S.	1	K.	10
	9	E.	1	Clear	0		9	SE.	1	C. K.	2		9	S.	1	K.	10
Mar. 4	0	S.	2	K.	10	Mar. 5	0	NW.	3	C.	1	Mar. 6	0	S. SE.	1	C. K.	7
	3	S.	2	N.	10		3	W. NW.	1	Clear	0		3	SE.	1	K.	10
	6	S. SW.	2	N.	10		6	W. NW.	1	C. K.	7		6	NE.	1	K.	10
	9	SW.	1	C. K.	8		9	NW.	1	C. S.	6		9	E.	1	K.	10
	Noon	S. SW.	2	C. K.	2		Noon	E.	1	C. K.	8		Noon	E.	2	N.	10
	3	W. NW.	2	C. K.	7		3	S.	1	C. S.	4		3	E.	2	N.	10
	6	NW.	4	C. K. S.	2		6	S.	1	C. S.	3		6	E.	1	N.	10
	9	NW.	3	Clear	0		9	E.	1	C. K.	10		9	NE.	2	N.	10
Mar. 7	0	NE.	1	N.	10	Mar. 8	0	W. NW.	2	Clear	0	Mar. 9	0	NW.	2	K.	10
	3	NE.	1	K.	10		3	N.	1	Clear	0		3	NW.	2	C. K.	1
	6	E.	1	N.	10		6	W.	3	Clear	0		6	NW.	3	C. K. S.	2
	9	E. SE.	1	Mist	10		9	W.	4	Clear	0		9	NW.	3	C. K.	4
	Noon	W.	1	Fog	10		Noon	W.	5	C.	3		Noon	W.	4	C. K.	7
	3	SW.	1	K.	10		3	W. NW.	5	C. K.	4		3	W. NW.	3	C. K.	7
	6	NW.	1	C. K.	10		6	NW.	3	C. K.	9		6	NW.	3	C. S.	4
	9	NW.	2	C. K.	6		9	NW.	4	K.	10		9	NW.	3	S.	1
Mar. 10	0	NW.	3	S.	2	Mar. 11	0	NW.	3	Clear	0	Mar. 12	0	NW.	2	C. K.	1
	3	NW.	4	S.	2		3	NW.	3	C. K.	3		3	NW.	2	C. K.	2
	6	NW.	3	Clear	0		6	NW.	2	Clear	0		6	NW.	2	C. K.	10
	9	NW.	4	Clear	0		9	NW.	3	Clear	0		9	W.	3	C. K.	9
	Noon	NW.	4	Clear	0		Noon	W. NW.	4	Clear	0		Noon	W.	3	C. K.	9
	3	NW.	4	Clear	0		3	W. NW.	3	Clear	0		3	W.	3	C. K.	9
	6	NW.	4	Clear	0		6	NW.	3	Clear	0		6	W. NW.	3	C. K.	6
	9	NW.	3	Clear	0		9	NW.	2	Clear	0		9	W. NW.	2	C.	2

REMARKS.

March 4. Rain at 3^h a. m.; amount, 0.160 inch.
6. Rain and hail at intervals during the afternoon, and the forenoon of the 7th; amount, 0.300 inch.
7. A display of the aurora borealis soon after dark; lightning at $7^h\ 45^m$.
9. Light snow-squalls at intervals during the day.

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1874. Mar. 13	0	W. NW.	2	Clear	0	1874. Mar. 14	0	NW.	4	Clear	0	1874. Mar. 15	0	NW.	2	Clear	0
	3	W. NW.	3	S.	2		3	NW.	3	Clear	0		3	NW.	2	Clear	0
	6	W. NW.	2	C. K.	10		6	NW.	3	Clear	0		6	NW.	1	C. S.	7
	9	NW.	2	C. K.	8		9	NW.	4	Clear	0		9	NW.	2	C. K. S.	7
	Noon	NW.	4	C. K.	10		Noon	NW.	3	S.	1		Noon	NW.	1	C. K.	8
	3	NW.	3	C. K.	9		3	W. NW.	3	Clear	0		3	SE.	1	C. K.	9
	6	NW.	3	C. K.	5		6	NW.	2	Clear	0		6	SE.	1	C. K.	10
	9	NW.	3	Clear	0		9	NW.	2	Clear	0		9	SE.	1	C. K.	10
Mar. 16	0	SE.	1	C. K.	9	Mar. 17	0	NE.	1	N.	10	Mar. 18	0	SW.	1	K.	10
	3	SE.	1	K.	10		3	NE.	2	N.	10		3	W.	1	K.	10
	6	SE.	1	N.	10		6	NW.	1	N.	10		6	E.	1	K.	10
	9	SE.	1	N.	10		9	NW.	1	K.	10		9	E.	1	Mist	10
	Noon	SE.	2	N.	10		Noon	W. NW.	1	K.	10		Noon	SE.	1	K.	10
	3	E. SE.	2	N.	10		3	NW.	1	C. S.	3		3	SE.	1	C. K.	10
	6	E.	2	N.	10		6	S. SW.	1	C. K. S.	9		6	NW.	1	K.	10
	9	NE.	1	N.	10		9	SW.	1	K.	10		9	SE.	1	C. K.	9
Mar. 19	0	SE.	1	C. K.	9	Mar. 20	0	W.	1	C. K.	8	Mar. 21	0	NW.	1	Haze	
	3	SE.	1	K.	10		3	NW.	2	C. K.	8		3	NW.	1	Haze	
	6	E.	1	K.	10		6	NW.	2	C. K.	10		6	W. NW.	1	C. K. S.	6
	9	SW.	1	K.	10		9	NW.	1	N.	10		9	E.	1	C. K.	8
	Noon	S. SW.	2	C. K.	10		Noon	NW.	2	K.	10		Noon	S. SE.	1	C. K.	9
	3	SW.	2	C. K.	9		3	W. NW.	2	C.	2		3	S.	2	C. K.	7
	6	W.	2	C. K.	9		6	NW.	1	C. S.	1		6	SW.	2	C. S.	4
	9	W.	1	Clear	0		9	NW.	1	Clear	0		9	SW.	1	Clear	0
Mar. 22	0	S.	1	Clear	0	Mar. 23	0	W. SW.	2	C. K.	7	Mar. 24	0	NW.	3	Clear	0
	3	S.	1	C.	3		3	W.	3	C. K.	4		3	NW.	2	Clear	0
	6	S.	1	C. K.	8		6	NW.	3	C. K.	4		6	NW.	1	Clear	0
	9	NW.	1	C. K.	3		9	NW.	3	C. S.	3		9	NW.	3	C. K.	4
	Noon	NW.	3	C. K.	3		Noon	NW.	3	C. K.	8		Noon	NW.	3	C. K.	4
	3	NW.	3	C.	1		3	NW.	3	C. K.	10		3	NW.	3	C. K.	3
	6	W.	2	C. K.	4		6	NW.	3	C. K.	10		6	NW.	2	Clear	0
	9	W. SW.	1	C. K.	4		9	NW.	3	C. K.	7		9	NW.	1	Clear	0
Mar. 25	0	NW.	1	Clear	0	Mar. 26	0	S.	2	C.	3	Mar. 27	0	NW.	1	C.	1
	3	W.	1	Clear	0		3	S.	1	C. K.	7		3	NW.	1	Clear	0
	6	SW.	1	Clear	0		6	S.	1	C. K.	10		6	NW.	2	C. S.	1
	9	S. SW.	1	C. K.	1		9	S.	1	K.	10		9	NW.	2	Clear	0
	Noon	S. SW.	2	C. K.	6		Noon	S.	1	K.	10		Noon	W.	2	C.	2
	3	S.	3	C.	1		3	S.	2	C. K. S.	6		3	S. SW.	1	Clear	0
	6	S. SW.	2	C. K.	2		6	S.	1	C. K. S.	2		6	SE.	2	C. K.	3
	9	S.	2	Clear	0		9	NW.	1	Clear	0		9	SE.	1	C. K.	10

REMARKS.

March 16. Hail and rain during the day and night; amount, 0.932 inch.
19. Light rain at 7^h a. m. and 6^h 10^m p. m.; amount, 0.020 inch.
20. Light shower at 0^h 5^m a. m.; amount, 0.020 inch.
21. A brilliant display of the aurora borealis at 2^h 30^m a. m.
25. A lunar halo at 11^h 30^m p. m.

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1874.						1874.						1874.					
Mar 28	0	S.	1	K.	10	Mar. 29	0	NW.	1	C. K.	10	Mar. 30	0	SW.	1	Clear	0
	3	W.	1	K.	10		3	W. NW.	1	C. K.	10		3	SW.	1	Haze	
	6	NW.	3	C. K.	9		6	NW.	3	C. K.	10		6	W. SW.	1	C. K.	7
	9	NW.	3	C. K.	8		9	N.	2	C. K.	10		9	W.	1	C. K.	9
	Noon	NW.	2	C. K.	2		Noon	W.	1	C. K. S.	4		Noon	SE.	1	C. K.	3
	3	NW.	1	Clear	0		3	NW.	1	C. K.	4		3	W. SW.	1	C. K.	5
	6	NW.	2	C. K.	2		6	NW.	1	Clear	0		6	NW.	1	Clear	0
	9	NW.	2	Clear	0		9	SE.	1	Clear	0		9	NW.	1	Clear	0
Mar. 31	0	NE.	1	Clear	0												
	3	N	1	C. K.	4												
	6	NW.	1	C. K.	10												
	9	NE.	1	N.	10												
	Noon	N. NE.	1	N.	10												
	3	NE.	1	N.	10												
	6	NE.	2	N.	10												
	9	NE.	2	N.	10												
Apr. 1	0	NE.	2	Rain	10	Apr. 2	0	N. by W.	1	K.	10	Apr. 3	0	SW.	1	Clear	0
	3	NE.	1	K.	10		3	N.	1	K.	10		3	W.	1	Clear	0
	6	E.	1	K.	10		6	N.	1	K.	10		6	W.	1	C.	2
	9	NE.	1	Snow	10		9	W.	1	K.	10		9	NW.	2	C. K.	2
	Noon	NE.	1	K.	10		Noon	W.	1	C. K.	10		Noon	NW.	2	C. K.	4
	3	NE.	1	N.	10		3	S.	1	C. K.	9		3	NW.	2	C.	1
	6	NE.	1	Mist	10		6	S. SW.	1	C. K. S.	4		6	W.	2	Clear	0
	9	NE.	1	Snow	10		9	SW.	1	Clear	0		7	W.	1	C. K.	3
Apr. 4	0	W.	1	C. K.	8	Apr. 5	0	NW.	2	C. K.	2	Apr. 6	0	S.	1	C. K.	10
	3	W.	1	C. K.	9		3	NW.	1	C. K.	4		3	SW.	1	C.	4
	6	W.	1.	C. K.	3		6	N.	1	C. K.	4		6	SW.	1	S.	2
	9	NW.	2	C. K.	10		9	SE.	2	C. K.	10		9	W. NW.	1	C.	6
	Noon	NW.	3	C.	3		Noon	SE.	2	C. K.	10		Noon	NW.	1	C.	7
	3	NW.	3	Clear	0		3	SE.	3	C. K.	10		3	N.	1	C. K.	4
	6	NW.	3	Clear	0		6	SE.	2	K.	10		6	N.	1	C. K.	8
	9	NW.	2	Clear	0		9	SE.	1	N.	10		9	E.	1	C. K.	3
Apr. 7	0	E.	1	C.	8	Apr. 8	0	NE.	1	C. K.	10	Apr. 9	0	S.	1	N.	10
	3	N.	1	K.	10		3	NE.	1	K.	10		3	E.	1	N.	10
	6	NW.	1	N.	10		6	NE.	1	Fog			6	N.	1	N.	10
	9	W. NW.	1	K.	10		9	E.	1	Haze			9	N. NE.	1	N.	10
	Noon	NW.	1	C. K.	10		Noon	SE.	1	C. K. S.	9		Noon	NE.	1	K.	10
	3	NW.	1	C. K.	6		3	E. SE.	2	C. K.	9		3	NE.	2	Mist	10
	6	NW.	1	C. K. S.	8		6	SE.	1	K.	10		6	NE.	2	N.	10
	9	NE.	1	Haze			9	S.	1	N.	10		9	E.	2	N.	10

REMARKS.

March 28. A light shower at $4^h\ 20^m$ a. m.
April 7. Rain at 1^h a. m.; amount, 0.224 inch.
8. Rain from $4^h\ 49^m$ p. m. to 3^h a. m. on the 10th; amount, 1.786 inches.

Day.	Hour.	WIND. Direction.	WIND. Force	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1874. Apr. 10	0	E.	3	N.	10	1874. Apr. 11	0	NW.	2	Clear	0	1874. Apr. 12	0	NW.	3	C. S.	4
	3	NE.	3	N.	10		3	NW.	1	Clear	0		3	NW.	3	Clear	0
	6	W.	2	C. K.	3		6	SW.	1	Clear	0		6	NW.	2	Clear	0
	9	NW.	2	K.	10		9	S.	2	Clear	0		9	NW.	2	Clear	0
	Noon	W.	3	C. K.	10		Noon	S.	3	Clear	0		Noon	N.	2	Clear	0
	3	W. NW.	3	C K.	10		3	S.	3	C. S.	1		3	N.	1	Clear	0
	6	NW.	2	C. K.	9		6	W.	2	C. K.	10		6	N.	2	Clear	0
	9	NW.	2	C.	1		9	NW.	4	K.	10		9	N.	1	Clear	0
Apr. 13	0	N.	1	Clear	0	Apr. 14	0	SE.	1	C. K.	10	Apr. 15	0	S.	1	C. K.	8
	3	NE.	1	Clear	0		3	S. SW.	1	C. K. S.	6		3	S.	2	N.	10
	6	W.	1	Haze			6	S. by W.	1	C. K.	10		6	S.	3	C. K.	8
	9	SE.	1	C.	1		9	S.	3	C. K.	9		9	SW.	2	C. K.	10
	Noon	S.	1	Clear	0		Noon	S.	3	N.	10		Noon	SW.	2	C. K.	10
	3	S. SE.	2	C. S.	3		3	S.	3	K.	10		3	SW.	1	N.	10
	6	S. SE.	1	C.	6		6	S.	3	C. K.	9		6	W.	1	C. K.	10
	9	SE.	1	C. S.	2		9	S.	1	C. K.	6		9	W.	1	K.	10
Apr. 16	0	W.	1	C. K.	2	Apr. 17	0	NE.	1	K.	10	Apr. 18	0	NE.	1	K.	10
	3	N.	1	C. K.	3		3	NE.	1	N.	10		3	NE.	1	K.	10
	6	N.	1	N.	10		6	NE.	1	N.	10		6	E. NE.	1	K.	10
	9	NE.	1	N.	10		9	E.	1	N.	10		9	W.	1	C. K.	10
	Noon	NE.	1	N.	10		Noon	NE.	1	K.	10		Noon	N. NE.	1	C. K.	10
	3	NE.	1	N.	10		3	NE.	1	K.	10		3	SE.	1	C. K.	10
	6	NE.	1	Mist	10		6	NE.	2	K.	10		6	SE.	1	C. K.	10
	9	NE.	1	K.	10		9	N.	2	K.	10		9	SE.	1	C. K.	10
Apr. 19	0	E.	1	C. K.	10	Apr. 20	0	NE.	1	N.	10	Apr. 21	0	W.	1	C. S.	4
	3	SE.	1	C. K.	10		3	NE.	1	N.	10		3	W.	1	C. S.	6
	6	SE.	1	C. K.	10		6	SE.	1	N.	10		6	NW.	4	C. K.	5
	9	S.	1	N.	10		9	SE.	1	N.	10		9	NW.	3	C. K.	7
	Noon	SE.	1	N.	10		Noon	SE.	1	K.	10		Noon	NW.	3	C. K.	3
	3	E.	1	N.	10		3	S. SE.	1	K.	10		3	NW.	3	C. K.	3
	6	E. NE.	1	N.	10		6	SW.	2	C. K.	4		6	NW.	2	C. K.	3
	9	NE.	1	N.	10		9	SW.	1	C. K.	4		9	NW.	1	C. K.	2
Apr. 22	0	NW.	1	C. K.	1	Apr. 23	0	S.	1	K.	10	Apr. 24	0	NW.	1	C. K.	4
	3	NW.	1	C. K.	10		3	E. SE.	1	K.	10		3	NW.	1	C. K.	4
	6	W.	1	C. K.	10		6	E. NE.	1	N.	10		6	NW.	1	C. K.	8
	9	S.	1	C. K.	8		9	E.	1	N.	10		9	W. NW.	1	Haze	
	Noon	S.	1	C. K.	9		Noon	NE.	1	N.	10		Noon	S. by W.	1	C. K.	7
	3	S.	2	C. K.	6		3	W. NW.	1	K.	10		3	S. SW.	1	C. K.	10
	6	S.	1	C. K. S.	8		6	NW.	1	C. K.	10		6	S.	1	C. K.	10
	9	S. SE.	1	C. K.	6		9	NW.	2	C. K.	10		9	S. SE.	1	K.	10

REMARKS.

April 15. Rain at 3^h a. m.; amount, 0.100 inch.
16. Light rain from 6^h a. m. to noon on the 17th; amount, 0.610 inch.
19. Rain from 9^h a. m. to 9^h a. m. on the 20th; amount, 1.090 inches.
23. Rain at $3^h\ 30^m$ a. m.; amount, 0 262 inch.

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy
1874. Apr. 25	0	S.	1	K.	10	1874. Apr. 26	0	NW.	2	C. K.	10	1874. Apr. 27	0	NW.	3	Clear	0
	3	SE.	1	N.	10		3	NW.	1	C. K.	10		3	W.	1	Clear	0
	6	E.	2	N.	10		6	NW.	2	C. K.	8		6	W.	1	Clear	0
	9	NE.	2	N.	10		9	NW.	4	C. K.	8		9	W. NW.	2	Clear	0
	Noon	NE.	2	N.	10		Noon	NW.	4	C. K.	7		Noon	W. NW.	2	C. K.	2
	3	NE.	2	N.	10		3	NW.	4	C. K.	7		3	NW.	1	C. K.	6
	6	NE.	2	N.	10		6	NW.	3	C. K.	3		6	NW.	1	C. K.	7
	9	NE.	2	N.	10		9	NW.	2	Clear	0		9	W.	1	C. K.	7
Apr. 28	0	E.	1	C. K.	9	Apr. 29	0	N.	2	N.	10	Apr. 30	0	NW.	1	Clear	0
	3	E.	1	C. K.	10		3	N. NE.	2	Snow	10		3	W.	1	Clear	0
	6	E.	1	N.	10		6	NW.	3	Snow	10		6	SW.	2	Clear	0
	9	NE.	2	C. K.	10		9	NW.	2	Snow	10		9	W. SW.	3	Clear	0
	Noon	NE.	2	C. K. S.	7		Noon	NW.	3	C. K.	5		Noon	W. SW.	3	C.	2
	3	NE.	2	C. K.	10		3	NW.	3	C. K.	8		3	W. SW.	1	C. K.	10
	6	N. NE.	2	C. K.	10		6	NW.	3	C. K.	4		6	W.	3	C. K.	10
	9	N.	2	N.	10		9	NW.	2	Clear	0		9	SW.	1	C. K.	10
May 1	0	NW.	1	C. K.	10	May 2	0	NW.	2	C. K.	10	May 3	0	NE.	1	N.	10
	3	NW.	1	C. K.	10		3	NW.	1	C. K.	10		3	NE.	1	K.	10
	6	W.	1	C. K.	10		6	NW.	1	C. K.	10		6	N. NE.	1	C. K.	9
	9	W.	1	C. K.	10		9	NW.	1	C. K.	10		9	NE.	1	C. K.	9
	Noon	W.	1	C. K.	7		Noon	W.	1	C. K.	10		Noon	E.	1	C. K.	10
	3	W.	2	C. K.	6		3	W.	1	C. K.	10		3	SW.	1	C. K.	3
	6	W. SW.	1	C. K. S.	7		6	NW.	1	N.	10		6	SW.	1	C. S.	3
	9	W. NW.	2	C. K.	10		9	W.	1	N.	10		9	S.	1	C.	2
May 4	0	S.	1	C.	4	May 5	0	N. NE.	3	N.	10	May 6	0	W.	1	C. K. S.	6
	3	SW.	1	C. K.	5		3	N. NE.	4	N.	10		3	NW.	1	C. K.	4
	6	SW.	1	C. K. S.	10		6	NE.	3	K.	10		6	W. NW.	1	C. K.	2
	9	NE.	1	K.	10		9	N. NE.	2	N.	10		9	NE.	1	C. K.	7
	Noon	E.	1	N.	10		Noon	N. NE.	2	N.	10		Noon	W.	1	C. K.	9
	3	E. NE.	2	N.	10		3	NE.	1	C. K.	10		3	W.	1	C. K.	10
	6	NE.	2	N.	10		6	W.	1	C. K. S.	8		6	NW.	2	C. K. S.	7
	9	NE.	2	N.	10		9	W.	1	C.	4		9	NW.	1	C. K.	9
May 7	0	NW.	1	Clear	0	May 8	0	NW.	1	Clear	0	May 9	0	S.	1	Clear	0
	3	NW.	1	Clear	0		3	NW.	1	Clear	0		3	S.	1	Clear	0
	6	NW.	1	Clear	0		6	SW.	1	C. K.	2		6	S.	1	Clear	0
	9	NW.	2	Haze			9	S.	1	K.	10		9	W.	3	Haze	
	Noon	NW.	3	Haze			Noon	W. SW.	1	C. K.	10		Noon	W.	2	Haze	
	3	W.	2	C. K.	4		3	W. SW.	3	C K.	10		3	SW.	3	Haze	
	6	W.	1	C. S.	4		6	W. SW.	1	C. K.	7		6	W. SW.	1	Haze	
	9	NW.	1	Clear	0		9	W.	1	Clear	0		9	SW.	1	C. K.	3

REMARKS.

April 25. Rain during the day; amount, 1.420 inches.
29. Rain, sleet, and snow during the forenoon; depth of snow, 2.5 inches, amount of rain and melted snow, 0.960 inch.
May 2. Light rain at 6^h p. m.; amount, 0.030 inch.
4. Rain from $10^h\ 20^m$ a. m. to noon on the 5th; amount, 1.350 inches.

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1874.						1874.						1874.					
May 10	0	SE.	1	Clear	0	May 11	0	W. NW.	1	Clear	0	May 12	0	NE.	1	Clear	0
	3	S.	1	Haze			3	NW.	1	Clear	0		3	NE.	1	C. K.	8
	6	S.	1	Haze			6	NW.	1	Clear	0		6	NE.	1	C. K.	10
	9	NW.	1	Haze			9	NW.	1	Haze			9	NE.	1	K.	10
	Noon	W. NW.	1	Haze			Noon	E.	3	Haze			Noon	SE.	1	Haze	
	3	W.	2	Haze			3	E. SE.	3	Haze			3	SE.	1	Haze	
	6	W.	1	Haze			6	E.	3	Haze			6	S.	1	Haze	
	9	W.	1	Clear	0		9	E.	3	C. K.	4		9	S.	1	Haze	
May 13	0	S.	1	C. K.	4	May 14	0	S.	1	Haze		May 15	0	S.	1	Haze	
	3	SW.	1	C. K.	4		3	S.	1	K.	10		3	N. NE.	1	Haze	
	6	SW.	1	C. K.	10		6	S.	1	C. K.	8		6	N. NE.	1	C. K.	4
	9	SE.	1	K.	10		9	SW.	1	Haze			9	NE.	1	C. K.	10
	Noon	SE.	2	Haze			Noon	S.	1	Haze			Noon	NE.	2	N.	10
	3	S.	1	Haze			3	S.	1	Haze			3	NE.	2	N.	10
	6	SE.	1	Haze			6	S.	1	Haze			6	NE.	2	N.	10
	9	SE.	1	C. K.	3		9	S.	1	Haze			9	E.	2	N.	10
May 16	0	NE.	2	K.	10	May 17	0	NE.	1	K.	10	May 18	0	SW.	2	K.	10
	3	NE.	1	N.	10		3	SE.	1	C. K.	8		3	SE.	1	K.	10
	6	N.	1	K.	10		6	NW.	1	Haze			6	NW.	2	K.	10
	9	W.	1	K.	10		9	N.	1	C. S.	4		9	N. NW.	2	C. K.	9
	Noon	SE.	1	C. K.	10		Noon	SW.	1	C.	2		Noon	NW.	2	C. K.	7
	3	SE.	1	C. K.	9		3	S.	1	C. K.	4		3	NW.	3	C. K.	4
	6	S.	1	C. K.	10		6	S.	2	C. K.	4		6	NW.	3	C. S.	2
	9	N.	1	K.	10		9	S.	3	C. K.	9		9	NW.	2	Clear	0
May 19	0	NW.	2	lear	0	May 20	0	SE.	1	C. K.	3	May 21	0	S.	1	C. K.	7
	3	NW.	2	Clear	0		3	S.	1	Haze			3	W.	2	C. K.	4
	6	W.	2	Clear	0		6	S.	1	C. K.	10		6	W.	1	Clear	0
	9	NW.	2	Clear	0		9	S.	2	C. K.	10		9	NW.	2	C. K.	4
	Noon	NW.	2	C.	1		Noon	S.	2	K.	10		Noon	NW.	2	C. K.	4
	3	W.	1	C.	2		3	SW.	3	C. K.	8		3	NW.	2	C. K.	3
	6	W.	2	C. K.	4		6	SW.	2	C. K.	9		6	NW.	2	C.	2
	9	S.	1	Clear	0		9	W.	3	C. K.	6		9	NW.	1	Clear	0
May 22	0	W.	1	Clear	0	May 23	0	W.	1	C. K.	3	May 24	0	S.	1	K.	10
	3	W.	1	Clear	0		3	W.	1	Clear	0		3	S.	1	N.	10
	6	W.	2	Clear	0		6	W.	1	Haze			6	S.	1	N.	10
	9	W. NW.	2	Clear	0		9	S.	1	C. K.	6		9	SE.	1	K.	10
	Noon	NW.	2	C. K.	2		Noon	S. by E.	1	C. K.	10		Noon	S.	1	K.	10
	3	NW.	2	C. K.	2		3	S. by E.	1	C. K.	10		3	E.	1	C. K.	9
	6	NW.	3	C. S.	3		6	SE.	2	K.	10		6	E. SE.	1	C. K.	8
	9	NW.	1	Clear	0		9	S.	1	N.	10		9	E. SE.	1	C. K.	7

REMARKS.

May 15. Rain during the afternoon ; amount, 0.330 inch.
16. A heavy shower at $3^h\ 23^m$ p. m.; amount, 0.604 inch.
18. Light rain at $0^h\ 55^m$ a. m.
20. Lightning at 8^h p. m.; a light shower at $11^h\ 30^m$ p. m.
23. Solar halo at $10^h\ 50^m$ a. m.; radius about 12°. Rain at 9^h p. m.; amount, 0.276 inch.

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1874. May 25	0	SE.	1	K.	10	1874. May 26	0	NW.	1	C. K.	3	1874. May 27	0	NW.	1	Clear	0
	3	E.	1	N.	10		3	NW.	2	Clear	0		3	NW.	1	Clear	0
	6	S.	1	K.	10		6	NW.	1	C.	3		6	W.	1	Clear	0
	9	S.	1	C. K.	10		9	W.	3	C. K.	3		9	NW.	2	C. K.	9
	Noon	S.	3	C. K.	4		Noon	NW.	3	C. K.	4		Noon	N.	1	C. K.	4
	3	W. NW.	1	C. K.	9		3	NW.	3	C. K.	9		3	N.	2	C.	1
	6	W. SW.	1	C. K.	10		6	NW.	2	C. K.	5		6	N. NE.	1	Clear	0
	9	NW.	1	C. K.	6		9	NW.	1	Clear	0		9	S.	1	C.	1
May 28	0	W.	1	Clear	0	May 29	0	SW.	1	Clear	0	May 30	0	S.	1	C.	2
	3	SW.	1	Clear	0		3	N.	1	C. S.	2		3	N.	1	Haze	
	6	SW.	1	Clear	0		6	N.	1	Fog			6	NE.	1	C. K.	4
	9	SE.	1	Clear	0		9	N.	1	Haze			9	N. NW.	1	C. K.	4
	Noon	SE.	1	Clear	0		Noon	W.	1	C. K.	8		Noon	SE.	1	C. K.	3
	3	SE.	1	Clear	0		3	S.	1	C. K.	2		3	SE.	1	C. K.	1
	6	S.	1	Clear	0		6	S.	1	C.	1		6	SE.	2	Clear	0
	9	S. by E.	1	Clear	0		9	W. NW.	1	Clear	0		9	SE.	1	C. K.	2
May 31	0	S.	1	Clear	0												
	3	S.	1	Clear	0												
	6	S.	1	Haze													
	9	SE.	1	Clear	0												
	Noon	SE.	2	Clear	0												
	3	SE.	2	C. K.	4												
	6	S.	1	C. K.	4												
	9	S.	1	C. K.	4												
June 1	0	W. NW.	1	C. K.	10	June 2	0	N.	3	C.	1	June 3	0	SE.	2	C. K.	9
	3	W.	1	C. K.	10		3	NW.	1	C. K.	2		3	SE.	1	C. K.	10
	6	NW.	2	C. K.	2		6	NW.	1	C. K.	2		6	SE.	1	C. K.	10
	9	NW.	3	C.	3		9	NW.	1	C.	2		9	SE.	1	K.	10
	Noon	NW.	3	C. K. S.	4		Noon	NE.	1	C. K. S.	4		Noon	E.	1	N.	10
	3	NW.	3	C. K.	3		3	E.	1	C. K. S.	5		3	E.	1	N.	10
	6	NW.	3	C. K.	2		6	E.	1	C. K.	5		6	E.	2	N.	10
	9	NW.	2	C. K.	1		9	NE.	3	C. K.	4		9	E.	1	N.	10
June 4	0	E.	1	K.	10	June 5	0	E.	1	C. K.	4	June 6	0	S.	1	N.	10
	3	N. by E.	1	K.	10		3	NE.	1	C. K.	8		3	S. by W.	1	N.	10
	6	NE.	1	K.	10		6	NE.	1	Fog	10		6	S. by W.	1	K.	10
	9	SE.	1	C. K.	10		9	NE.	1	Fog			9	S.	1	N.	10
	Noon	SW.	1	C. K.	10		Noon	S. by E.	1	C. K.	4		Noon	S.	1	K.	10
	3	SE.	1	C. K. S.	4		3	SW.	1	C. K.	8		3	SE.	1	C. K.	6
	6	S. SE.	1	C. K.	4		6	SE.	2	N.	10		6	S. SE.	1	C K.	4
	9	E.	1	Clear	0		9	S.	1	N.	10		9	S.	1	S.	2

REMARKS.

May 25. Showers with lightning and thunder at $5^h\ 20^m$ a. m. and $3^h\ 20^m$ p. m.; amount, 0.286 inch.
June 1. Light shower at $0^h\ 10^m$ a. m.; amount, 0.044 inch.
5. A heavy shower at 5^h p. m.; amount, 0.890 inch.

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1874. June 7	0	SE.	1	C. K.	4
	3	S.	1	Fog	
	6	S.	1	Fog	
	9	SW.	1	C. K.	4
	Noon	S. SE.	1	C. K.	2
	3	S.	1	C. K.	2
	6	S.	1	C. K.	4
	9	S.	1	Clear	0
June 10	0	W.	1	C.	2
	3	W.	1	Clear	0
	6	W.	1	Clear	0
	9	NW.	1	Clear	0
	Noon	SE.	1	C. K.	4
	3	SE.	1	N.	10
	6	NE.	1	K.	10
	9	N.	1	K.	10
June 13	0	NW.	1	Clear	0
	3	NW.	2	C. K.	4
	6	NW.	1	C. K.	4
	9	NW.	3	C. K.	6
	Noon	NW.	2	C. K.	3
	3	NW.	2	Clear	0
	6	NW.	2	Clear	0
	9	NW.	2	Clear	0
June 16	0	SE.	2	C. K.	4
	3	S.	1	C. K.	6
	6	S.	1	C. S.	4
	9	SW.	2	C. K.	7
	Noon	S.	3	C. K.	9
	3	S.	3	C. K.	9
	6	S. by W.	1	C. K. S.	9
	9	S.	1	K.	10
June 19	0	NW.	2	Clear	0
	3	NW.	2	C. S.	3
	6	NW.	2	Clear	0
	9	NW.	3	C.	2
	Noon	NW.	2	C. K.	5
	3	N. NW.	3	C. K.	5
	6	NW.	1	C. K.	3
	9	E.	1	S.	1

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1874. June 8	0	S.	1	C.K.	2
	3	W.	1	C. K.	2
	6	W.	1	Clear	0
	9	SW.	1	C. K.	6
	Noon	W.	1	C. K.	6
	3	SW.	2	C. K.	8
	6	SW.	1	C. K. S.	5
	9	NW.	2	C. K.	8
June 11	0	NE.	2	K.	10
	3	NE.	2	C. K.	9
	6	NE.	1	C. K.	10
	9	E.	1	C. K.	9
	Noon	SE.	1	N.	10
	3	S.	1	C. K.	10
	6	SE.	1	C. K.	10
	9	E.	1	K.	10
June 14	0	NW.	1	Clear	0
	3	W. NW.	1	S.	1
	6	W. NW.	1	C. K. S.	7
	9	SE.	1	C. K.	8
	Noon	S.	1	C.	6
	3	S.	1	C. K.	7
	6	S.	1	C. K.	10
	9	S.	1	C.	1
June 17	0	S.	2	N.	10
	3	S.	1	N.	10
	6	W.	1	K.	10
	9	W.	2	C. K.	7
	Noon	W.	3	C. K.	5
	3	W.	3	C. K.	5
	6	NW.	3	Clear	0
	9	NW.	1	Clear	0
June 20	0	NE.	1	C. K.	9
	3	N.	1	C.	3
	6	N.	2	C.	2
	9	N.	1	C. K.	4
	Noon	NE.	1	C. K.	7
	3	E.	2	C. K.	7
	6	E.	2	C. S.	4
	9	E.	1	C. K.	10

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1874. June 9	0	SE.	1	C.	1
	3	W.	1	C. K.	2
	6	W.	1	Haze	
	9	NW.	2	Clear	0
	Noon	W. by S.	2	Clear	0
	3	W. NW.	2	Clear	0
	6	W.	1	Clear	0
	9	W.	2	C.	2
June 12	0	S.	2	C. K.	8
	3	S.	1	C. K.	4
	6	S.	1	C. K.	6
	9	SW.	1	C. K.	3
	Noon	W. SW.	1	C. K.	4
	3	S. SW.	1	C. K.	8
	6	NW.	2	C. K. S.	4
	9	NW.	2	Clear	0
June 15	0	W.	1	Clear	0
	3	W.	1	Clear	0
	6	W.	1	C.	2
	9	S.	1	C.	4
	Noon	S.	1	C. K.	5
	3	S.	2	C. K.	2
	6	S.	1	C. K.	4
	9	S. SE.	2	C. K.	6
June 18	0	W.	1	Clear	0
	3	NW.	2	Clear	0
	6	W. NW.	2	C. S.	3
	9	W. NW.	2	C.	2
	Noon	W.	3	C.	2
	3	NW.	3	Clear	0
	6	NW.	2	Clear	0
	9	NW.	2	Clear	0
June 21	0	SE.	1	C. K.	10
	3	S.	1	C. K.	3
	6	S.	1	C. K.	7
	9	S.	1	C. K.	8
	Noon	S.	2	C. K.	8
	3	S.	3	C. K.	5
	6	S.	1	C. K.	4
	9	S.	1	Clear	0

REMAR S.

June 10. Shower at 3^h p. m.; amount, 0.214 inch.
11. Light rain at 11^h a. m.; amount, 0.116 inch.
12. Heavy shower at $2^h\ 30^m$ p. m.; amount, 0.992 inch.
17. Light rain at $0^h\ 10^m$ a. m.; amount, 0.120 inch.

Day.	Hour.	WIND. Direction.	WIND. Force	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1874. June 22	0	S.	1	Clear	0	1874. June 23	0	S.	1	C. K.	2	1874. June 24	0	SW.	1	C. K.	9
	3	S.	1	C. K. S.	3		3	S.	1	Clear	0		3	SW.	1	C. K.	10
	6	S. SW.	1	Haze			6	S. by W.	1	C. K.	2		6	W.	1	C. K.	8
	9	W.	1	Clear	0		9	W.	1	C.	2		9	NW.	2	C. K.	7
	Noon	W.	1	C. K.	3		Noon	W.	1	C. K.	3		Noon	NW.	2	C. K.	6
	3	S.	1	C. K.	4		3	W.	1	C. K.	6		3	N.	1	C. K.	3
	6	S.	1	C. K.	8		6	W.	2	C. K.	9		6	NW.	1	C. K.	4
	9	S.	1	C. K.	7		9	W.	1	C. K.	8		9	SE.	1	C. K.	2
June 25	0	NW.	1	Clear	0	June 26	0	W.	1	C. K.	9	June 27	0	NW.	1	C.	1
	3	NW.	1	Clear	0		3	W.	1	C. K.	9		3	W.	1	Clear	0
	6	N. NW.	1	Clear	0		6	W.	1	C. K.	9		6	W. NW.	1	Haze	
	9	S.	1	Haze			9	W. by S.	1	C. K.	8		9	NE.	2	C. K.	8
	Noon	SE.	1	Haze			Noon	W. SW.	1	C. K.	9		Noon	W.	1	C. K.	9
	3	SE.	1	Clear	0		3	W. SW.	1	C. K.	7		3	W.	1	C. K.	10
	6	S. SE.	1	C. K.	5		6	NW.	2	C. K.	8		6	NE.	1	C.	3
	9	W.	2	N.	10		9	NW.	1	C. K.	3		9	E.	1	C. K.	10
June 28	0	E.	1	C. K.	3	June 29	0	S.	1	Clear	0	June 30	0	W.	1	C. K.	7
	3	S.	1	K.	10		3	SW.	1	Clear	0		3	W.	1	C. K.	10
	6	W.	1	C. K.	10		6	SW.	1	Haze			6	NW.	1	C. K.	10
	9	S.	1	C. K.	10		9	S. SW.	1	Haze			9	NW.	2	C. K.	8
	Noon	S. SE.	2	C. K.	2		Noon	S. SE.	2	C. K.	1		Noon	W.	1	N.	9
	3	S.	1	C. K.	3		3	S. SE.	2	C. K.	2		3	S.	1	C. K.	9
	6	SW.	1	C.	2		6	W.	2	C. K.	4		6	W.	1	C. K. S.	8
	9	Calm	0	Clear	0		9	NW.	2	C. K.	4		9	W.	1	C. K.	6
July 1	0	W.	1	C. K.	10	July 2	0	SW.	1	C. K.	9	July 3	0	NW.	2	C. K.	5
	3	W.	1	C. K.	3		3	S.	1	C. K.	10		3	W. NW.	3	C. K.	3
	6	E.	2	C. K.	10		6	S.	1	K.	10		6	NW.	3	Clear	0
	9	E.	2	C.	2		9	S. by W.	1	K.	10		9	NW.	2	Clear	0
	Noon	S.	1	C. K.	2		Noon	S.	1	C. K.	9		Noon	W.	1	C. K.	2
	3	S. by E.	1	C. K.	6		3	S. by E.	1	C. K.	10		3	W.	1	C. K.	1
	6	S.	2	C. K.	4		6	S.	1	C. K.	9		6	W.	1	C. S.	2
	9	S.	2	C. K.	8		9	S.	1	C. K.	9		9	NE.	1	C.	2
July 4	0	W.	2	C. K.	3	July 5	0	W.	2	K.	10	July 6	0	NW.	1	S.	1
	3	W.	1	C. K.	2		3	W.	1	C. K.	6		3	W. NW.	1	C. K.	2
	6	W.	1	Haze			6	W.	1	Clear	0		6	W. NW.	1	C. K.	4
	9	S. SE.	1	C. K.	2		9	NW.	3	C. K.	7		9	N. NE.	1	C. K.	2
	Noon	SW.	2	C. K.	2		Noon	N.	3	C. K.	9		Noon	N.	2	C. K.	7
	3	SW.	3	Haze			3	NW.	3	C. K.	8		3	N.	1	C. K.	4
	6	SW.	3	C. K.	9		6	NW.	2	C. K.	2		6	E. SE.	2	C. K.	2
	9	NW.	3	N.	10		9	NW.	1	Clear	0		9	SE.	1	Clear	0

REMARKS.

June 23. Light rain at $8^h\ 35^m$ p. m.
25. Shower at $8^h\ 40^m$ p. m.; amount, 0.106 inch.
30. Shower at $10^h\ 40^m$ p. m.; amount, 0.250 inch.
July 2. Intense lightning in the evening.
4. A heavy shower with high wind at $7^h\ 40^m$ p. m.; amount of rain, 0.336 inch.
5. Shower at 1^h p. m.; amount, 0.104 inch.

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather	Portion cloudy.
1874. July 7	0	E.	1	Clear	0	1874. July 8	0	S.	2	Clear	0	1874. July 9	0	S.	1	Clear	0
	3	E.	1	C. K.	10		3	S.	1	Clear	0		3	SW.	1	Clear	0
	6	S.	1	C. K.	8		6	S.	1	C. S.	3		6	SW.	1	C.	3
	9	SE.	1	C. K.	4		9	W.	1	C. K.	7		9	S.	1	Clear	0
	Noon	SE.	1	C. K.	2		Noon	SW.	2	C. K.	7		Noon	E. SE.	1	C.	1
	3	S.	1	C. K.	2		3	SW.	2	C. K.	7		3	S.	1	C. K.	2
	6	S.	1	Clear	0		6	SW.	2	C. K.	5		6	SW.	1	C. K.	8
	9	SW.	1	Clear	0		9	SW.	1	C. S.	1		9	SW.	1	C.	3
July 10	0	S.	2	C. K.	2	July 11	0	SE.	1	C.	2	July 12	0	SW.	1	C. K.	6
	3	W.	1	C. K.	2		3	SW.	2	C. K.	4		3	W.	1	C. S.	3
	6	W.	1	C. K.	9		6	SW.	2	C.	2		6	S.	2	C. K.	10
	9	SW.	1	C.	2		9	SW.	3	C. K.	8		9	S.	2	C. K.	10
	Noon	SW.	3	C. K.	3		Noon	S.	3	C. K.	8		Noon	S.	4	C. K.	8
	3	S. SW.	3	C. K.	4		3	SW.	1	N.	10		3	S.	4	C. K.	10
	6	W.	3	C. K.	4		6	S.	1	C. K.	10		6	SW.	3	C. K.	9
	9	SW.	1	N.	10		9	S.	2	N.	10		9	SW.	2	C. K.	3
July 13	0	S.	2	S.	1	July 14	0	S.	1	C.	1	July 15	0	N.	1	Clear	0
	3	SW.	1	C. S.	3		3	SW.	1	C. K.	6		3	SW.	1	C.	3
	6	SW.	2	C. K.	7		6	SW.	1	C.	3		6	W.	1	C.	2
	9	SW.	1	C.	2		9	N.	1	Clear	0		9	S.	1	Clear	0
	Noon	W.	1	K.	8		Noon	W.	1	C. K.	1		Noon	S.	1	C. K.	2
	3	W.	1	K.	4		3	W.	1	C. K.	1		3	SE.	1	C. K.	1
	6	SW.	1	C. K.	4		6	S.	1	Clear	0		6	S.	2	C. K.	3
	9	S.	1	C. K.	3		9	S.	1	Clear	0		9	S.	1	Clear	0
July 16	0	SW.	1	Clear	0	July 17	0	N.	2	C.	2	July 18	0	NE.	1	C. S.	2
	3	SW.	1	C.	4		3	N.	1	Clear	0		3	N.	1	Clear	0
	6	SW.	1	C. S.	6		6	W.	1	Clear	0		6	NW.	1	C. S.	2
	9	S.	1	C. S.	3		9	NE.	1	Clear	0		9	W.	1	Clear	0
	Noon	W.	2	C. K.	10		Noon	W.	1	C. K.	6		Noon	S.	1	Clear	0
	3	W.	1	N.	10		3	W.	1	C. K.	2		3	SE.	1	K.	1
	6	W.	1	C. K.	7		6	NE.	1	C. K.	5		6	SE.	1	Clear	0
	9	W.	1	C. K.	9		9	E.	1	Clear	0		9	SE.	1	Clear	0
July 19	0	SE.	1	Clear	0	July 20	0	SE.	1	Clear	0	July 21	0	S.	1	K.	10
	3	S.	1	C. K.	3		3	S.	1	Clear	0		3	SE.	1	K.	10
	6	S.	1	Haze			6	S.	1	C. K.	3		6	S.	1	K.	10
	9	SE.	1	Haze			9	S.	1	C. K.	7		9	NW.	1	N.	10
	Noon	S. by E.	1	Haze			Noon	S. by W.	2	C. K.	10		Noon	W.	1	N.	10
	3	S.	1	Haze			3	S. by W.	1	C. K.	9		3	NW.	1	N.	10
	6	SE.	2	Clear	0		6	S.	2	C. K.	10		6	N. NW.	1	N.	10
	9	SE.	1	Clear	0		9	S.	1	C.	3		9	NE.	1	K.	10

REMARKS.

July 9. Light shower at $8^h\ 20^m$ p. m.
10. Rain at 9^h p. m.; amount, 0.256 inch.
11. Rain at 3^h and 9^h p. m.; amount, 0.900 inch.
21. Shower at $1^h\ 40^m$ a. m.; amount, 0.244 inch.

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1874. July 22	0	NE.	1	C. K.	10	1874. July 23	0	NW.	1	C. K.	1	1874. July 24	0	S.	3	C. K.	9
	3	NW.	1	C. K.	4		3	NW.	1	Clear	0		3	S.	1	C. K.	9
	6	NW.	1	Haze			6	W.	1	Haze			6	S.	1	C. K.	8
	9	N.	2	Clear	0		9	S.	1	Clear	0		9	S.	1	C. K.	2
	Noon	NW.	2	C. K.	2		Noon	S. SW.	1	C. K.	4		Noon	S.	1	C. K.	8
	3	NW.	2	C. K.	1		3	S.	1	C. K.	1		3	S.	1	C. K.	10
	6	NW.	1	C.	2		6	SE.	2	Clear	0		6	S.	2	C. K. S.	8
	9	NW.	1	Clear	0		9	SE.	1	Clear	0		9	S.	2	C. K.	10
July 25	0	S.	3	C. K.	7	July 26	0	S.	1	Clear	0	July 27	0	SE.	1	K.	10
	3	S.	1	C. K.	4		3	S.	1	Clear	0		3	S.	2	N.	10
	6	SE.	1	C. K.	9		6	SE.	1	C. K.	3		6	S.	2	C. K.	10
	9	S. SE.	1	C.	1		9	SE.	3	C. K.	9		9	S. SE.	2	C. K.	10
	Noon	S.	1	C. K.	4		Noon	SE.	3	C. K.	10		Noon	S.	3	C. K.	10
	3	S.	1	C. K.	4		3	SW.	3	C. K.	10		3	S.	2	N.	10
	6	S.	3	C. K.	4		6	SW.	1	C. K.	10		6	S.	2	K.	10
	9	S. SW.	2	C. K.	9		9	S. SE.	2	C. K.	10		9	S.	1	Mist	10
July 28	0	S. by E.	1	Mist	10	July 29	0	S.	1	K.	10	July 30	0	NW.	2	C. K. S.	7
	3	S.	1	Mist	10		3	S.	1	N.	10		3	W. NW.	1	C. S.	3
	6	S.	1	N.	10		6	S.	1	N.	10		6	W.	2	C. S.	2
	9	S.	1	C. K.	10		9	SW.	1	K.	10		9	NW.	2	C. K.	2
	Noon	S.	2	C. K.	10		Noon	W.	1	N.	10		Noon	NW.	2	C. K.	2
	3	S.	3	C. K.	9		3	W.	3	C. K.	10		3	NW.	2	C. K.	2
	6	S.	1	C. K.	9		6	NW.	2	C. K. S.	9		6	NW.	1	C.	1
	9	S.	1	C. K.	10		9	NW.	2	C. K.	7		9	NW.	1	S.	1
July 31	0	NW.	1	Clear	0												
	3	NW.	1	Clear	0												
	6	W.	1	Fog													
	9	W.	2	C. K.	1												
	Noon	W.	1	Clear	0												
	3	SW.	3	C. K.	3												
	6	S. SW.	1	C. K.	9												
	9	W.	1	C. S.	2												
Aug. 1	0	S.	1	C. K.	10	Aug. 2	0	NW.	1	C. K.	7	Aug. 3	0	NW.	1	Clear	0
	3	S.	1	C. K.	10		3	NW.	1	C. K.	8		3	NW.	1	Clear	0
	6	S.	1	C.	4		6	W. NW.	1	C. K.	8		6	NW.	1	Clear	0
	9	SE.	1	C. K.	8		9	NW.	2	C.	1		9	W.	1	C.	3
	Noon	S.	2	C. K.	10		Noon	NW.	3	C.	3		Noon	W. NW.	1	C.	4
	3	W.	1	K.	10		3	NW.	3	C. K.	4		3	NW.	2	C.	3
	6	W.	1	K.	10		6	NW.	2	C. K.	2		6	N. NW.	2	C. K.	2
	9	SW.	1	K.	10		9	NW.	1	C. K.	2		9	NW.	2	Clear	0

REMARKS.

July 25 Sun thermometer, Casella No. 13583, was broken to-day and replaced by No. 9485 by the same maker.
27. Rain at $0^h\ 35^m$ a. m.; amount, 0.056 inch.
29. Rain at 3^h a. m.; amount, 0.332 inch.
August 1. Light rain at 3^h p. m.

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1874. Aug. 4	0	NW.	1	C. K.	10	1874. Aug. 5	0	NW.	1	Clear	0	1874. Aug. 6	0	S.	1	K.	10
	3	NW.	1	C. K.	9		3	NW.	1	Clear	0		3	W.	1	C. K.	10
	6	NW.	2	C. S.	2		6	NW.	1	Clear	0		6	W.	1	C. K.	9
	9	E.	2	C. K.	4		9	NE.	1	Clear	0		9	S.	1	C.	2
	Noon	E.	1	C. K.	6		Noon	N. NE.	1	C. K.	2		Noon	SE.	1	C. K.	3
	3	N.	1	C. K.	7		3	N.	1	C.	2		3	SE.	1	C. K.	4
	6	N.	1	C.	2		6	E.	2	C. K.	9		6	S.	2	C. K.	4
	9	N.	1	Clear	0		9	S.	1	C. K.	9		9	S.	1	C. K.	10
Aug. 7	0	S. SW.	1	C. K.	10	Aug. 8	0	S.	2	K.	10	Aug. 9	0	NW.	2	C. K.	4
	3	SW.	1	C. K.	4		3	S.	1	K.	10		3	NW.	3	C. K.	2
	6	S.	2	C. K.	9		6	S.	1	K.	10		6	NW.	3	C. K.	3
	9	S.	3	K.	10		9	S.	1	K.	10		9	NW.	2	C.	2
	Noon	S.	3	N.	10		Noon	W.	2	C. K.	10		Noon	N. NW.	3	C.	2
	3	S.	3	N.	10		3	NW.	3	N.	10		3	NW.	3	C. K.	4
	6	S.	3	Mist	10		6	NW.	2	C. K.	9		6	NW.	2	C. K.	3
	9	S.	2	K.	10		9	NW.	2	C. K.	6		9	NW.	1	C. K.	2
Aug. 10	0	W.	1	Clear	0	Aug. 11	0	SW.	1	Clear	0	Aug. 12	0	SE.	1	Clear	0
	3	W.	1	Clear	0		3	SW.	1	Fog			3	W.	1	Clear	0
	6	W.	1	C. K.	6		6	NW.	1	Fog			6	SE.	1	Haze	
	9	NW.	1	C. K.	10		9	NW.	1	Clear	0		9	S.	1	C. K.	4
	Noon	SW.	1	C. K.	10		Noon	S.	1	C. K.	5		Noon	S. SW.	2	C. K.	2
	3	S. SW.	2	C. K.	8		3	S. SE.	1	C. K.	7		3	S.	2	Clear	0
	6	SW.	1	N.	10		6	SE.	1	C. K.	4		6	S.	1	C. K.	10
	9	SW.	1	C.	1		9	SE.	1	Clear	0		9	W.	1	N.	10
Aug. 13	0	W.	2	C. K.	10	Aug. 14	0	N.	2	C. K.	6	Aug. 15	0	NW.	2	C. K.	6
	3	SW.	1	C. K.	10		3	NW.	2	C. K.	9		3	NE.	2	C. K.	8
	6	W.	1	C. K.	10		6	NW.	2	C. K.	2		6	NW.	2	C. K.	3
	9	SE.	1	Clear	0		9	NE.	1	Clear	0		9	NW.	1	C. K.	3
	Noon	NE.	1	C. K.	3		Noon	NW.	1	C. K.	4		Noon	N. NW.	2	C. K.	4
	3	N. NE.	2	C. K.	1		3	N. NW.	2	C. K.	3		3	NW.	2	C. K.	4
	6	N.	1	C.	3		6	NW.	2	C. K.	4		6	NW.	2	Clear	0
	9	NE.	2	Clear	0		9	N.	1	K.	10		9	NW.	1	Clear	0
Aug. 16	0	NW.	1	Clear	0	Aug. 17	0	W.	1	Clear	0	Aug. 18	0	NW.	1	Clear	0
	3	W.	1	Clear	0		3	NW.	1	Clear	0		3	NW.	1	Clear	0
	6	W. SW.	1	Haze			6	NW.	1	Haze			6	W.	1	Clear	0
	9	SE.	2	Haze			9	E.	2	Clear	0		9	W.	1	Clear	0
	Noon	E.	2	C. K.	2		Noon	SE.	2	Clear	0		Noon	S.	1	Clear	0
	3	E.	2	C. K.	2		3	SE.	1	C. K.	2		3	S.	1	C.	1
	6	SE.	1	Clear	0		6	SE.	1	Clear	0		6	S.	1	Clear	0
	9	SE.	1	Clear	0		9	S. SE.	1	Clear	0		9	S.	1	C.	1

REMARKS.

August 7. Light rain at intervals after noon.
8. Light shower at $1^h\ 30^m$ p. m.; amount, 0.016 inch.
10. Rain at $5^h\ 15^m$ p. m.; amount, 0.098 inch.
12. Rain at 9^h p. m.; amount, 0.298 inch.

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1874. Aug. 19	0	S.	1	Haze		1874. Aug. 20	0	NW.	1	Haze		1874. Aug. 21	0	S.	1	Haze	
	3	E.	1	Haze			3	NE.	1	Clear	0		3	SW.	1	Haze	
	6	NE.	2	C. K.	6		6	SE.	1	C.	4		6	S.	1	Haze	
	9	E.	2	Haze			9	SE.	1	C.	3		9	S.	1	Clear	0
	Noon	S. SE.	1	Haze			Noon	S. SW.	1	C. K.	4		Noon	S.	1	C. K.	1
	3	S.	1	Haze			3	W.	1	C. K.	4		3	W.	2	Clear	0
	6	S. SE.	2	Haze			6	W.	1	C. K.	3		6	S.	1	Haze	
	9	S.	1	Haze			9	S.	1	C. K.	1		9	SW.	1	K. S.	1
Aug. 22	0	W.	1	C. K.	4	Aug. 23	0	E.	1	C. K.	10	Aug. 24	0	E.	2	N.	10
	3	S.	1	C. S.	2		3	E. SE.	1	C. K.	7		3	E.	2	N.	10
	6	S.	1	C. K.	8		6	NE.	1	C. K.	9		6	NE.	2	N.	10
	9	S.	1	C. K.	10		9	E.	2	K.	10		9	NE.	1	N.	10
	Noon	W.	2	C. K.	10		Noon	E.	1	N.	10		Noon	NE.	1	K.	10
	3	N. NW.	3	N.	10		3	E.	1	N.	10		3	N.	1	K.	10
	6	NE.	3	K.	10		6	E.	2	N.	10		6	N. NE.	1	K.	10
	9	E.	2	C. K.	8		9	E.	2	N.	10		9	N.	1	C. K.	10
Aug. 25	0	N. by W.	1	C. K.	8	Aug. 26	0	NE.	1	C. K.	3	Aug. 27	0	NE.	1	C.	3
	3	N. NE.	1	C. K.	3		3	NE.	2	C. K.	6		3	N. NE.	1	Haze	
	6	N.	1	K.	10		6	NE.	2	C. K.	7		6	N. NE.	1	C. K.	10
	9	NE.	2	C. K.	9		9	NE.	2	C.	2		9	NE.	1	C. K.	6
	Noon	NE.	2	C. K.	8		Noon	NE.	2	C.	1		Noon	NE.	1	C. K.	8
	3	NE.	2	C. K.	10		3	NE.	2	C.	2		3	NE.	1	C. K.	6
	6	NE.	1	K.	10		6	NE.	2	C. K.	1		6	E.	1	C. K.	3
	9	NE.	1	C. K.	6		9	N.	1	C. K.	1		9	NW.	2	Clear	0
Aug. 28	0	NW.	1	Clear	0	Aug. 29	0	NW.	1	Clear	0	Aug. 30	0	NW.	1	C. K.	1
	3	NW.	1	Clear	0		3	NW.	1	Clear	0		3	N.	1	C. K.	2
	6	NW.	1	Clear	0		6	NW.	1	Clear	0		6	NW.	1	C. K.	8
	9	NE.	1	Clear	0		9	S.	1	Haze			9	S.	1	C. K.	9
	Noon	NE.	2	C. K.	4		Noon	E.	1	C.	1		Noon	SE.	1	C. K.	9
	3	NE.	2	C. K.	5		3	E.	1	C.	2		3	S.	1	C. K.	8
	6	NE.	1	C. K.	3		6	E. SE.	1	Clear	0		6	SE.	1	C. K.	7
	9	E.	1	Clear	0		9	W.	1	C. S.	2		9	S.	1	C. K.	8
Aug. 31	0	NW.	1	N.	10												
	3	W.	1	N.	10												
	6	NW.	1	N.	10												
	9	NW.	1	N.	10												
	Noon	NW.	2	C. K. N.	9												
	3	NW.	1	C. K.	2												
	6	NW.	1	Clear	0												
	9	NW.	1	Clear	0												

REMARKS.

August 20. Thermometer at 1^h p. m., 100°.1.
2^h p. m., 102°.6.
2^h 30^m p. m., 102°.1.
5^h p. m., 100°.1.
21. Thermometer at 11^h a. m., 95°.9.
1^h p. m., 98°.3.
2^h p. m., 101°.1.
3^h 45^m p. m., 101°.1.
22. Rain at 1^h 12^m p. m.; amount, 0.022 inch.
23. Rain at noon; amount, 0.990 inch.
31. Light rain at 9^h a. m.; amount, 0.066 inch.

Day.	Hour.	WIND. Direction.	WIND. Force	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direct'on.	WIND. Force.	Weather.	Portion cloudy.
1874. Sept. 1	0	W.	1	Clear	0	1874. Sept. 2	0	NW.	1	Clear	0	1874. Sept. 3	0	SW.	1	Clear	0
	3	NW.	1	Clear	0		3	NW.	1	Clear	0		3	SW.	1	Clear	0
	6	NW.	1	Haze			6	NW.	1	Haze			6	NW.	1	Haze	
	9	NW.	1	Haze			9	NW.	1	Haze			9	SE.	1	Haze	
	Noon	N.	2	Haze			Noon	NW.	1	C. K.	4		Noon	S.	1	C. K.	3
	3	N.	1	Haze			3	W.	1	Haze			3	NW.	1	C. K.	6
	6	N.	1	Haze			6	S.	1	Haze			6	SW.	1	C. S.	4
	9	NW.	1	Clear	0		9	W.	1	Clear	0		9	SW.	1	Clear	0
Sept. 4	0	SW.	1	Clear	0	Sept. 5	0	E.	1	K.	10	Sept. 6	0	S.	1	Clear	0
	3	N. NE.	2	C.	1		3	NE.	1	K.	10		3	SE.	1	C. K.	8
	6	N. NE.	2	C. K.	10		6	NE.	1	K.	10		6	E. NE.	1	Fog	
	9	NE.	2	C. K.	10		9	E.	1	C. K.	8		9	S.	1	C. K.	8
	Noon	N. NE.	1	C. K.	8		Noon	SE.	1	C. K.	8		Noon	S. SE.	1	C. K.	9
	3	NE.	2	C. K.	8		3	SE.	1	C. K.	6		3	W.	1	C. K.	4
	6	E.	2	K.	10		6	SE.	2	C. K.	1		6	S.	1	C. K.	4
	9	NE.	2	K.	10		9	S. SE.	2	C. K.	3		9	E.	1	K.	10
Sept. 7	0	NW.	1	C. K.	4	Sept. 8	0	S.	1	C. K. S.	2	Sept. 9	0	NW.	2	C. K.	5
	3	NW.	1	C. K. S.	3		3	SW.	1	C. K.	2		3	NW.	1	C.	1
	6	NW.	1	Clear	0		6	SW.	1	C. K.	1		6	N. NW.	1	C.	1
	9	NW.	1	Clear	0		9	SW.	1	N.	10		9	NE.	2	Haze	
	Noon	N.	2	C. K.	4		Noon	W. by S.	3	C. K.	7		Noon	NE.	3	C. K.	4
	3	NW.	2	C. K.	2		3	SW.	3	C. K.	4		3	NE.	3	C. K.	3
	6	SW.	1	C. K.	7		6	W.	3	C. K.	10		6	E.	2	C. K.	2
	9	W.	1	C. K.	3		9	W.	3	C. K.	9		9	E.	1	C. K.	2
Sept. 10	0	NE.	1	Clear	0	Sept. 11	0	W. SW.	1	Clear	0	Sept. 12	0	N.	1	Haze	
	3	NW.	1	Clear	0		3	NW.	1	Clear	0		3	NW.	1	Clear	0
	6	NW.	1	Haze			6	NW.	1	Haze			6	NW.	1	Haze	
	9	N.	1	Clear	0		9	W.	1	Clear	0		9	W.	1	Clear	0
	Noon	W.	1	Clear	0		Noon	S. SE.	2	Haze			Noon	S.	1	C. K.	2
	3	W.	1	Clear	0		3	S.	1	C. K.	4		3	S. SE.	1	C. K.	1
	6	W.	1	Clear	0		6	E.	1	Haze			6	S.	1	Haze	
	9	W.	1	Clear	0		9	E.	1	C. K.	4		9	S.	1	S.	2
Sept. 13	0	N. NE.	2	K.	10	Sept. 14	0	E. NE.	1	K.	10	Sept. 15	0	SE.	1	K.	10
	3	NE.	2	K.	10		3	E. NE.	1	K.	10		3	SE.	1	K.	10
	6	E.	1	K.	10		6	NE.	1	C. K.	10		6	NE.	1	Mist	10
	9	E.	1	C. K.	9		9	E. SE.	1	K.	10		9	SE.	1	C. K.	10
	Noon	SE.	1	K.	10		Noon	E.	2	C. K.	10		Noon	S.	1	C. K.	10
	3	NE.	2	K.	10		3	E. SE.	2	C. K.	10		3	E. SE.	1	N.	10
	6	E.	3	C. K.	9		6	E.	1	C. K.	6		6	NE.	1	N.	10
	9	E.	3	K.	10		9	S.	1	K.	10		9	NE.	1	N.	10

September 6. Shower at 8^h 33^m p. m.; amount, 0.316 inch.
8. Showers at 8^h a. m. and 4^h 20^m p. m.; amount, 0.266 inch.
15. Rain from 3^h p. m. to 3^h p. m. on the 17th; amount, 6.570 inches.

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1874. Sept. 16	0	NE.	1	N.	10	1874. Sept. 17	0	N. NE.	2	Mist	10	1874. Sept. 18	0	NW.	2	K.	10
	3	NE.	1	N.	10		3	NE.	3	N.	10		3	NW.	1	C. K.	3
	6	E. NE.	2	N.	10		6	N. NE.	2	N.	10		6	W. NW.	1	C. K. S.	3
	9	E.	1	N.	10		9	N. NE.	3	N.	10		9	NW.	2	C. K.	1
	Noon	E.	1	N.	10		Noon	NW.	1	K.	10		Noon	W.	1	C. K.	2
	3	N. NE.	2	K.	10		3	W.	1	N.	10		3	W.	1	C.	2
	6	NE.	1	K.	10		6	W.	1	K.	10		6	NE.	2	C. K.	4
	9	NE.	2	K.	10		9	W.	1	K.	10		9	N.	1	C. K.	4
Sept. 19	0	N.	1	Clear	0	Sept. 20	0	NE.	1	K.	10	Sept. 21	0	NW.	1	Clear	0
	3	NW.	1	Clear	0		3	NE.	1	N.	10		3	NW.	1	Clear	0
	6	NW.	1	K.	10		6	S.	1	N.	10		6	NW.	1	C. S.	2
	9	NE.	1	C. K.	7		9	SE.	1	N.	10		9	NW.	1	C. K.	2
	Noon	NW.	1	C. K.	7		Noon	N. NW.	3	C. K.	10		Noon	NW.	2	C. K.	1
	3	S.	1	C. K.	7		3	W. NW.	2	N.	10		3	NW.	2	C.	1
	6	E.	1	C. K.	3		6	N.	1	C. K.	9		6	NW.	1	C. K.	4
	9	E.	1	C. K.	9		9	W.	1	Clear	0		9	NW.	1	C. K.	5
Sept. 22	0	NW.	1	C. K.	4	Sept. 23	0	N.	1	C.	1	Sept 24	0	S.	1	Clear	0
	3	NW.	1	C. K.	6		3	N.	1	Clear	0		3	W.	1	C. S.	4
	6	NW.	1	C. K.	8		6	N.	1	Fog			6	SW.	1	C. K.	8
	9	E. SE.	1	C. K.	2		9	S.	1	Clear	0		9	S.	1	C. K.	6
	Noon	S. SE.	1	C.	1		Noon	S.	2	C. K.	1		Noon	S.	2	C. K.	3
	3	SE.	1	C. K.	4		3	S.	1	C. K.	4		3	S.	2	C. K.	1
	6	S.	1	Clear	0		6	S.	1	Clear	0		6	S.	1	K.	2
	9	S.	1	C. K.	2		9	S.	1	Clear	0		9	S.	1	Clear	0
Sept. 25	0	S.	1	S.	1	Sept. 26	0	S.	1	C.	2	Sept. 27	0	S. SE.	1	C.	3
	3	SW.	1	C. S.	3		3	SW.	1	C.	3		3	SE.	1	C.	2
	6	SW.	1	Fog	0		6	W.	1	Fog			6	E.	1	Haze	
	9	S. SE.	1	Clear	0		9	SE.	1	C.	2		9	S. by E.	1	C. K.	1
	Noon	S. SE.	2	K.	1		Noon	SE.	2	C.	3		Noon	S. by E.	3	C. K.	2
	3	SE.	1	Haze			3	SE.	1	K.	2		3	S. by E.	3	C. K.	4
	6	S.	1	C. K.	2		6	SE.	1	S.	1		6	SE.	3	C. K.	10
	9	S.	1	C.	2		9	SE.	1	C.	3		9	SE.	1	C. K.	9
Sept. 28	0	SE.	1	C. K.	10	Sept. 29	0	N. NE.	2	N.	10	Sept. 30	0	NW	1	Clear	0
	3	SE.	2	C. K.	9		3	NE.	3	N.	10		3	W.	1	Clear	0
	6	E.	2	C. K.	9		6	NE.	4	C. K.	10		6	SW.	3	C. K.	2
	9	SE.	1	C. K.	10		9	N.	2	N.	10		9	W.	3	C. K.	3
	Noon	S. SE.	2	C. K.	10		Noon	N.	3	N.	10		Noon	W. NW.	3	C. K.	5
	3	SE.	2	C. K.	10		3	NW.	2	N.	10		3	W. NW.	3	C. K.	5
	6	E.	1	N.	10		6	NW.	4	K.	10		6	NW.	3	N.	10
	9	NE.	2	N.	10		9	NW.	2	Clear	0		9	NW.	3	C. K.	8

REMARKS.

September 20. Rain at 3^{h} a. m.; amount, 0.534 inch.
28. Rain from 5^{h} p. m. to 3^{h} p. m. on the 29th; amount, 1.032 inches.

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1874. Oct. 1	0	W.	1	C. K.	3
	3	W.	1	C. K.	4
	6	N.W.	1	Clear	0
	9	W. NW.	2	Clear	0
	Noon	NW.	1	C. K.	2
	3	NW.	2	C. K.	1
	6	SE.	1	Clear	0
	9	SE.	1	Clear	0
Oct. 2	0	S.	2	Clear	0
	3	S.	2	Clear	0
	6	S.	1	C. K.	3
	9	S. SW.	2	C. K.	2
	Noon	SW.	2	C. K.	1
	3	NW.	2	C. K.	2
	6	NW.	3	Clear	0
	9	NE.	1	Clear	0
Oct. 3	0	E.	1	Clear	0
	3	NW.	1	Clear	0
	6	NW.	1	C. K.	2
	9	N. NW.	1	Haze	
	Noon	S.	1	Haze	
	3	S.	1	C. K.	1
	6	S.	1	C. K.	1
	9	S. SW.	1	C. K.	6
Oct. 4	0	W.	1	C. K.	8
	3	W.	1	K.	10
	6	W.	1	C. K.	8
	9	N. NE.	2	C. K.	7
	Noon	N.	2	C. K.	2
	3	N.	2	C. K.	8
	6	N.	1	C. K. S.	1
	9	NW.	2	Clear	0
Oct. 5	0	N.	1	C. K.	4
	3	N.	1	C. S.	2
	6	N.	2	Clear	0
	9	N.	2	C.	1
	Noon	E.	2	C. K.	2
	3	N.	2	K.	6
	6	E. SE.	1	C. K. S.	10
	9	NE.	1	Haze	
Oct. 6	0	NW.	1	C.	4
	3	NW.	1	Haze	
	6	NW.	1	C. K. S.	6
	9	SE.	1	C. K.	9
	Noon	SE.	2	C. K.	10
	3	SE.	2	C. K.	10
	6	SE.	1	C. K.	10
	9	NE.	2	K.	10
Oct. 7	0	SE.	1	K.	10
	3	E.	1	N.	10
	6	E.	1	N.	10
	9	E.	1	C. K.	10
	Noon	SE.	2	C. K.	9
	3	S.	1	C. K.	9
	6	NW.	2	C. K.	10
	9	NW.	1	K.	10
Oct. 8	0	S. SE.	1	C. K.	10
	3	E.	1	K.	10
	6	NE.	1	K.	10
	9	E.	2	C. K.	9
	Noon	E.	1	C. K.	9
	3	W.	1	C. K.	10
	6	W.	2	C. K.	9
	9	W.	1	C. K.	9
Oct. 9	0	W.	1	K.	9
	3	SW.	1	C.	2
	6	SW.	1	C. S.	2
	9	W.	1	Haze	
	Noon	W.	1	C. K.	4
	3	W.	1	C. K.	4
	6	NE.	1	C. S.	1
	9	NE.	1	C. K.	4
Oct. 10	0	S.	1	K.	10
	3	S.	1	K.	10
	6	S.	2	K.	10
	9	SW.	1	C. K.	10
	Noon	W.	2	C. K.	9
	3	W.	1	Haze	
	6	S.	1	C. S.	4
	9	S.	1	Clear	0
Oct. 11	0	S.	1	Haze	
	3	S.	1	Clear	0
	6	S.	1	Clear	0
	9	S.	1	C. K.	9
	Noon	W. SW.	3	C. K.	4
	3	W.	2	C. K.	4
	6	NW.	1	C. K.	4
	9	NW.	1	C. K.	6
Oct. 12	0	W.	1	C. K. S.	4
	3	W.	1	Clear	0
	6	NW.	1	C. S.	1
	9	W. NW.	2	Clear	0
	Noon	W.	3	C. K.	8
	3	W.	3	C. K.	6
	6	W.	2	C. K.	9
	9	W. NW.	3	C. K.	2
Oct. 13	0	NW.	1	Haze	
	3	NW.	1	C. K.	7
	6	NW.	2	C. K.	9
	9	NW.	3	C. K.	4
	Noon	NW.	3	C. K.	10
	3	NW.	3	C. K.	9
	6	NW.	3	C. K.	9
	9	W.	1	C. K.	3
Oct. 14	0	NW.	2	Clear	0
	3	NW.	2	C. K.	1
	6	NW.	1	C. S.	2
	9	N.	1	C. K.	3
	Noon	N.	2	C. K.	10
	3	N. NW.	2	C. K. S.	3
	6	E.	1	Haze	
	9	N.	1	Clear	0
Oct. 15	0	NW.	1	Clear	0
	3	NW.	1	Clear	0
	6	NW.	1	Fog	
	9	SE.	1	Haze	
	Noon	S.	1	C.	1
	3	S.	2	Clear	0
	6	S.	1	C.	3
	9	S.	1	Clear	0

REMARKS.

October 8. Light showers in the evening; amount, 0.038 inch.
10. Shower at $2^h\ 10^m$ a. m.; amount, 0.218 inch.
13. Light shower at $2^h\ 30^m$ a. m.; amount, 0.007 inch.

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1874. Oct. 16	0	S. SW.	1	Haze		1874. Oct. 17	0	NW.	1	C. K.	4	1874. Oct. 18	0	SE.	1	Clear	0
	3	W.	1	Clear	0		3	NW.	1	C. K.	6		3	E.	1	C. K.	3
	6	NW.	1	Fog			6	NW.	1	C. K.	8		6	NW.	1	Haze	
	9	NW.	1	C. K.	8		9	N.	1	Fog			9	NW.	3	C. K.	3
	Noon	S. SE.	1	C. K.	9		Noon	E.	1	C. K.	8		Noon	NW.	3	C. K.	3
	3	E.	1	C. K.	6		3	S.	1	C. K.	8		3	NW.	3	C. K.	2
	6	NE.	1	C. K.	4		6	SE.	1	C. K.	4		6	NW.	3	C. S.	1
	9	N.	1	C. K.	3		9	SE.	1	S.	2		9	W.	2	Clear	0
Oct. 19	0	NW.	2	Clear	0	Oct. 20	0	W.	1	Clear	0	Oct. 21	0	NW.	1	C.	2
	3	W.	2	Clear	0		3	W.	1	Clear	0		3	NW.	1	Clear	0
	6	W. NW.	1	Clear	0		6	NW.	1	C. S.	2		6	W.	1	Haze	
	9	NW.	2	Clear	0		9	E. SE.	1	Haze			9	NW.	1	Haze	
	Noon	NW.	3	Clear	0		Noon	S. SW.	1	Haze			Noon	NW.	1	Haze	
	3	NW.	2	Clear	0		3	S. SW.	1	Haze			3	S.	1	Haze	
	6	NW.	1	Clear	0		6	S. SW.	1	Haze			6	NE.	1	Haze	
	9	NW.	1	Clear	0		9	SW.	1	Haze			9	NE.	1	Haze	
Oct. 22	0	W. NW.	1	Haze		Oct. 23	0	SE.	1	Haze		Oct. 24	0	NE.	1	C. K.	8
	3	NW.	1	Haze			3	NE.	1	C. K.	6		3	NE.	1	Mist	10
	6	NW.	1	Haze			6	NW.	1	C. S.	4		6	NE.	1	K.	10
	9	NW.	1	Haze			9	SE.	1	C. S.	4		9	N. NE.	1	K.	10
	Noon	S. SE.	1	Haze			Noon	SW.	1	C. K. S.	6		Noon	NE.	1	C. K.	9
	3	SE.	1	Haze			3	E.	1	C. K.	4		3	E.	1	C. K.	10
	6	E.	1	Haze			6	E. SE.	1	Haze			6	NE.	1	C. K.	10
	9	SE.	1	Haze			9	E.	1	Haze			9	NE.	1	C. K.	10
Oct. 25	0	NE.	1	K.	10	Oct. 26	0	NW.	1	Haze		Oct. 27	0	NW.	1	C. K.	6
	3	N.	1	K.	10		3	NW.	1	Fog			3	NW.	1	Clear	0
	6	N.	1	K.	10		6	NW.	1	Fog			6	W.	1	C.	1
	9	NE.	1	K.	10		9	NW.	1	Haze			9	S. SE.	1	Haze	
	Noon	NE.	1	C. K.	9		Noon	SE.	1	Haze			Noon	SE.	2	C. K.	3
	3	E.	1	C. K.	7		3	SE.	1	Haze			3	W.	1	C. K.	3
	6	N. NE.	1	Haze			6	W. NW.	1	C. S.	1		6	NW.	1	C. S.	1
	9	NW.	1	Clear	0		9	W. NW.	1	C.	2		9	NW.	1	S.	1
Oct. 28	0	NW.	1	Clear	0	Oct. 29	0	E. SE.	1	Clear	0	Oct. 30	0	S.	1	C. K.	8
	3	NW.	1	Haze			3	NW.	1	Clear	0		3	NE.	1	C. K.	10
	6	NW.	1	C. K.	6		6	NE.	1	Fog			6	N.	1	N.	10
	9	W.	1	C. K.	9		9	S.	1	Haze			9	NW.	2	K.	10
	Noon	W.	1	C. K.	8		Noon	S.	1	C. K.	4		Noon	NW.	2	Haze	
	3	S.	1	Haze			3	S.	3	Haze			3	NW.	2	Haze	
	6	E. NE.	1	C. K.	3		6	S.	1	Haze			6	NW.	2	Haze	
	9	E. NE.	1	C.	6		9	S. SE.	2	Haze			9	NW.	2	Haze	

REMARKS.

October 30. Light rain at $5^h\ 30^m$ a. m.

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1874. Oct. 31	0	N.	1	Haze		1874.						1874.					
	3	NW.	1	Clear	0												
	6	S.	1	Clear	0												
	9	SE.	1	Haze													
	Noon	NW.	1	Haze													
	3	NW.	2	Haze													
	6	NW.	2	Haze													
	9	NW.	2	C. K.	4												
Nov. 1	0	SE.	1	Haze		Nov. 2	0	W.	2	Haze		Nov. 3	0	SE.	1	Haze	
	3	NW.	1	Clear	0		3	W.	1	Haze			3	NW.	1	Haze	
	6	W.	1	S.	1		6	W.	1	Haze			6	NW.	1	Haze	
	9	SW.	1	Haze			9	NW.	1	Haze			9	NE.	1	Haze	
	Noon	SW.	2	Haze			Noon	W.	1	Haze			Noon	S.	1	Haze	
	3	SW.	2	Haze			3	W. NW.	1	Haze			3	S.	1	Haze	
	6	SW.	2	Haze			6	SE.	1	Haze			6	NE.	1	Haze	
	9	SW.	2	Haze			9	SE.	1	Haze			9	NW.	1	Haze	
Nov. 4	0	NW.	1	Haze		Nov. 5	0	NW.	1	Haze		Nov. 6	0	S.	1	K.	10
	3	NW.	1	Haze			3	SE.	1	Fog			3	S.	1	K.	10
	6	NW.	1	Haze			6	S.	1	Fog			6	SW.	1	C. K.	10
	9	W.	1	Fog			9	S.	1	Fog			9	W.	1	Haze	
	Noon	S.	1	Haze			Noon	SE.	1	C. K.	6		Noon	W.	2	Haze	
	3	SE.	1	C. K. S.	6		3	SE.	1	Haze			3	W. NW.	2	Haze	
	6	E.	1	Haze			6	S.	1	Haze			6	NW.	1	Haze	
	9	NE.	1	Haze			9	S.	1	Haze			9	NW.	1	Haze	
Nov. 7	0	NW.	2	Clear	0	Nov. 8	0	NW.	1	Clear	0	Nov. 9	0	SE.	1	K.	10
	3	NW.	1	Clear	0		3	NW.	1	Clear	0		3	S.	1	K.	10
	6	NW.	1	Clear	0		6	NE.	1	Fog			6	S.	1	C. K.	10
	9	NW.	1	Haze			9	E. SE.	1	Fog			9	S.	2	C. K.	10
	Noon	E.	1	Haze			Noon	SE.	2	C. K.	2		Noon	W. NW.	1	N.	10
	3	E.	1	Clear	0		3	S. SE.	1	C. K.	3		3	S. SW.	1	C. K.	3
	6	E.	1	Clear	0		6	SE.	1	C. S.	3		6	N.	1	C. K.	4
	9	NW.	1	Clear	0		9	W.	1	C. K.	6		9	NW.	1	Fog	
Nov. 10	0	NW.	1	C. K.	3	Nov. 11	0	S.	1	C. K.	4	Nov. 12	0	NW.	2	C. K.	10
	3	NW.	1	Fog			3	S.	1	C. K.	8		3	NW.	2	C. K.	3
	6	NW.	1	Fog			6	NW.	1	C. K.	9		6	NW.	2	C. K. S.	2
	9	W. NW.	1	C. K.	10		9	NW.	3	Clear	0		9	NW.	1	C. K.	3
	Noon	S. SE.	1	Haze			Noon	NW.	3	C. K.	4		Noon	NW.	3	C. K.	4
	3	S. SE.	1	C. K.	10		3	NW.	3	C. K.	10		3	N. NW.	2	C. K.	4
	6	S.	1	C. K.	4		6	NW.	1	K.	10		6	NW.	2	S.	2
	9	SW.	1	C. K.	6		9	NW.	2	C. K.	10		9	NW.	1	S.	1

REMARKS.

November 3. The solar thermometer Casella 9485 was changed for No. 13581.

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1874. Nov. 13	0	NW.	2	C. K.	3	1874. Nov. 14	0	N.	1	C. K.	2	1874. Nov. 15	0	N.	1	C. K.	2
	3	NW.	1	C. K.	3		3	NW.	1	Clear	0		3	NW.	1	C. K.	6
	6	NW.	2	C. K.	3		6	N.	1	Clear	0		6	SW.	1	C. S.	2
	9	NW.	2	C.	1		9	NE.	1	Clear	0		9	SE.	2	C. K.	6
	Noon	NW.	2	C. K.	6		Noon	N. NE.	1	Clear	0		Noon	S.	2	C. K.	9
	3	NW.	2	C. K.	7		3	E.	1	C. K.	3		3	SE.	1	C. K.	9
	6	N.	2	C. K. S.	3		6	SE.	2	Clear	0		6	NW.	1	C. K.	9
	9	N.	1	Clear	0		9	E.	1	Clear	0		9	NW.	1	C. K.	3
Nov. 16	0	NW.	1	Clear	0	Nov. 17	0	N.	1	Haze		Nov. 18	0	SE.	1	K.	10
	3	NW.	1	Clear	0		3	N.	1	C. K.	9		3	S.	1	N.	10
	6	NW.	1	Clear	0		6	S.	1	C. K. S.	10		6	SW.	1	K.	10
	9	NW.	1	Haze			9	N.	1	Fog			9	W.	1	C. K.	9
	Noon	N. NE.	1	C. K.	9		Noon	S. SE	2	C. K.	10		Noon	NW.	1	C. K.	7
	3	S. SE.	1	C. K.	4		3	S.	1	C. K.	9		3	NW.	1	C. K.	10
	6	NE.	1	C.	1		6	S. SE.	1	C. K.	10		6	NW.	1	C. K.	10
	9	N. NE.	2	Clear	0		9	S. SW.	1	C. K.	8		9	N. NW.	2	C. K.	8
Nov. 19	0	NW.	1	C. K.	4	Nov. 20	0	NE.	1	K.	10	Nov. 21	0	NW.	2	K.	10
	3	N.	1	C. K.	6		3	NE.	1	N.	10		3	NW.	2	C. K.	6
	6	N.	1	K.	10		6	NE.	1	N.	10		6	NW.	2	C. K.	8
	9	NE.	2	K.	10		9	N.	2	N.	10		9	NW.	2	C. K.	6
	Noon	NE.	2	C. K. S.	8		Noon	SE.	1	K.	10		Noon	NW.	2	C. K.	9
	3	E.	2	C. K.	10		3	SE.	1	C. K.	10		3	NW.	2	C. K.	6
	6	E.	1	K.	10		6	NW.	1	N.	10		6	NW.	1	Clear	0
	9	E.	1	K.	10		9	NW.	3	C. K.	10		9	NW.	1	C. K.	1
Nov. 22	0	SW.	1	C. K.	4	Nov. 23	0	S. SE.	1	N.	10	Nov. 24	0	W.	2	Clear	0
	3	NW.	1	Haze			3	SE.	2	K.	10		3	SW.	1	Clear	0
	6	NW.	1	C. K.	10		6	S. SE.	2	N.	10		6	SW.	2	Clear	0
	9	N.	1	C. K.	10		9	S.	1	K.	10		9	SW.	2	C. S.	2
	Noon	E.	1	C. K.	10		Noon	S. SW.	5	C. K.	10		Noon	NW.	2	C. K. S.	7
	3	NE.	2	N.	10		3	W. SW.	4	C. K. S.	9		3	NW.	2	C. K. S.	5
	6	E.	2	N.	10		6	W.	4	N.	10		6	NW.	2	C. K.	9
	9	E.	2	N.	10		9	W.	4	C. K.	2		9	N.	1	C. K.	10
Nov. 25	0	N.	2	C. K.	10	Nov. 26	0	NW.	1	Clear	0	Nov. 27	0	S. by W.	1	Clear	0
	3	N.	2	C. K.	6		3	NW.	1	C.	1		3	S. SE.	1	C.	1
	6	NW.	3	C. S.	1		6	NW.	1	Clear	0		6	S.	1	Clear	0
	9	NW.	3	Clear	0		9	NW.	1	Clear	0		9	S.	1	Clear	0
	Noon	NW.	2	Clear	0		Noon	N. NW.	1	Clear	0		Noon	S.	2	Clear	0
	3	NW.	2	Clear	0		3	S.	1	Clear	0		3	SE.	2	Clear	0
	6	NW.	2	Clear	0		6	S.	1	Clear	0		6	SE.	1	Clear	0
	9	NW.	1	Clear	0		9	S. by E.	1	Clear	0		9	SE.	1	Clear	0

REMARKS.

November 18. Rain at 3^h a. m.; amount, 0.060 inch.
20. Rain at 0^h 50^m a. m.; amount, 0.420 inch.
22. Rain from 2^h 30^m p. m. to 6^h a. m. on the 23d; amount, 0.574 inch.

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force	Weather.	Portion cloudy
1874. Nov. 28	0	SE.	1	Clear	0	1874. Nov. 29	0	S. SE	1	C. K.	10	1874. Nov. 30	0	NW.	2	C. K.	9
	3	S.	1	Clear	0		3	E.	1	N.	10		3	W.	1	C. K.	10
	6	N. NE.	1	Fog			6	NW	3	N.	10		6	NW.	3	C. K.	3
	9	N.	1	Fog			9	NW.	3	C. K.	10		9	NW.	3	C. K.	1
	Noon	E.	1	C. K.	7		Noon	N. NW.	3	C. K.	8		Noon	NW.	3	C. K.	1
	3	S.	1	C. S.	4		3	NW.	2	C. K.	1		3	NW.	3	C. K.	1
	6	NE.	1	C. S.	2		6	NW.	2	S.	1		6	N.	1	S.	1
	9	E.	1	C.	3		9	NW.	2	Clear	0		9	NE.	1	K.	10
Dec. 1	0	NW.	1	Clear	0	Dec. 2	0	SE.	1	C. K.	10	Dec. 3	0	S.	1	Clear	0
	3	NW.	1	C.	3		3	W.	1	C. K.	9		3	S. SE.	1	Clear	0
	6	NW.	1	C. K.	9		6	W.	1	C. K.	10		6	S.	1	Clear	0
	9	SW.	1	K.	10		9	S. SE.	1	C. K.	7		9	S. SE.	1	C. K.	2
	Noon	S. SE.	2	C. K.	10		Noon	S.	1	C. K.	3		Noon	S.	2	C. K.	2
	3	S.	2	C. K.	8		3	S. by E.	1	C.	6		3	S. SW.	1	C. K. S.	8
	6	S. SE.	1	C. S.	1		6	S.	1	S.	1		6	NW.	1	N.	10
	9	S.	1	C. K.	6		9	S.	1	Clear	0		9	W.	1	N.	10
Dec. 4	0	NW.	3	K.	10	Dec. 5	0	N.	1	Clear	0	Dec. 6	0	W.	1	C. S.	3
	3	NW.	3	C. K.	6		3	NW.	1	Clear	0		3	W.	1	Haze	
	6	NW.	2	C. K.	10		6	NW.	1	C. S.	1		6	SE.	1	C. K. S	4
	9	N. by W.	1	C. K. S.	9		9	SE.	1	Haze			9	SE.	1	Fog	
	Noon	N. NW.	2	C. K. S.	1		Noon	SE.	1	C. K.	10		Noon	SE.	1	C. K.	10
	3	N. NW.	1	Clear	0		3	SE.	1	C. K.	3		3	SE.	1	C. K.	10
	6	N.	1	Clear	0		6	SE.	1	C. K.	2		6	W.	1	N.	10
	9	N.	1	Clear	0		9	SE.	1	Haze			9	W.	1	N.	10
Dec. 7	0	S. SW.	1	N.	10	Dec. 8	0	W.	1	K.	10	Dec. 9	0	N.	1	Clear	0
	3	W.	1	K.	10		3	W. NW.	2	C. K.	6		3	E.	1	Clear	0
	6	W.	1	K.	10		6	NW.	3	C. K. S.	9		6	E.	1	Clear	0
	9	NW.	1	C. K.	10		9	NW.	3	C. K.	9		9	S.	1	C. K.	7
	Noon	NW.	1	C. K.	3		Noon	NW.	4	C. K.	4		Noon	SW.	1	C. K.	8
	3	N.	1	C. K.	3		3	NW.	3	C. K.	2		3	S.	1	C. K.	9
	6	SW.	1	C. K. S.	7		6	NW.	2	S.	1		6	S.	1	C. K.	4
	9	W.	1	C. K.	9		9	NE.	1	Clear	0		9	NW.	2	Clear	0
Dec. 10	0	NW.	1	C. K. S.	4	Dec. 11	0	SW.	1	Snow	10	Dec. 12	0	NW.	2	S.	1
	3	NW.	1	Clear	0		3	W.	1	C. K.	6		3	NW.	1	C.	1
	6	NW.	1	Clear	0		6	W.	1	K.	10		6	NW.	1	C. K.	6
	9	SE.	1	C. K.	9		9	W.	1	C. K.	2		9	SW.	2	C. K.	9
	Noon	NW.	1	C. K.	6		Noon	W.	2	C. K.	1		Noon	W.	2	C. K.	9
	3	SE.	1	C. K.	10		3	NW.	2	C. K.	7		3	W.	1	C. K.	9
	6	S. SW.	1	K.	10		6	NW.	2	C. K. S.	2		6	S.	1	C. K.	7
	9	S.	1	K.	10		9	NW.	3	Haze			9	SE.	1	C. K.	10

REMARKS.

November 29. Rain at 3^h a. m., changed to hail at 7^h 20^m a. m.; amount, 0.608 inch.
December 3. Rain at 4^h 45^m p. m.; amount, 0.158 inch.
6. Rain at 6^h p. m.; amount, 0.414 inch.
11. Light snow at 0^h 5 a. m.

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1874. Dec. 13	0	SW.	1	Haze		1874. Dec. 14	0	S.	2	K.	10	1874. Dec. 15	0	NW.	3	Clear	0
	3	NW.	1	Clear	0		3	S.	1	K.	10		3	NW.	3	Clear	0
	6	W.	1	C. K. S.	9		6	S.	1	C. K. S.	9		6	NW.	2	Clear	0
	9	S.	1	C. K.	8		9	W.	1	C. K. S.	9		9	N.	1	Clear	0
	Noon	S.	1	C. K.	10		Noon	NW.	4	C. K.	6		Noon	N.	1	Clear	0
	3	S.	1	C. K. S.	9		3	NW.	4	C. K.	8		3	NW.	1	C.	1
	6	S.	1	C. K.	10		6	NW.	3	C. K.	9		6	N.	2	Clear	0
	9	S.	2	N.	10		9	NW.	3	Clear	0		9	S.	1	C. K.	1
Dec. 16	0	NW.	1	Clear	0	Dec. 17	0	S.	1	C. K.	9	Dec. 18	0	NW.	3	C. K.	2
	3	NW.	1	Clear	0		3	SW.	1	C. K.	3		3	NW.	2	Clear	0
	6	NW.	1	C. K. S.	3		6	NW.	1	C. K. S.	8		6	NW.	3	Clear	0
	9	S.	1	C. K. S.	6		9	S.	1	C. K. S.	7		9	NW.	2	Clear	0
	Noon	S.	2	C. K.	8		Noon	NW.	1	C. K. S.	9		Noon	W. NW.	2	S.	1
	3	S.	1	C. K.	10		3	NW.	3	C. K. S.	8		3	NW.	1	Clear	0
	6	S. SE.	1	C. K.	10		6	W.	3	C. K.	10		6	S.	1	Clear	0
	9	S. SE.	1	C. K.	10		9	NW.	3	C. K.	9		9	S.	1	Clear	0
Dec. 19	0	NW.	1	Clear	0	Dec. 20	0	NW.	1	C. K.	10	Dec. 21	0	NW.	3	C. K.	9
	3	NW.	1	Clear	0		3	N.	1	K.	10		3	NW.	3	C. K.	6
	6	NW.	1	Clear	0		6	N.	1	K.	10		6	NW.	2	C. K.	2
	9	SE.	1	Clear	0		9	N.	1	N.	10		9	NW.	1	Clear	0
	Noon	S.	1	Clear	0		Noon	N.	2	N.	10		Noon	NW.	1	Clear	0
	3	NW.	1	S.	1		3	N.	2	N.	10		3	N. NW.	1	Clear	0
	6	NW.	1	C.	3		6	N.	3	N.	10		6	NW.	1	Clear	0
	9	NE.	1	Haze			9	NW.	4	N.	10		9	NE.	1	C. S.	4
Dec. 22	0	SE.	1	C. K.	10	Dec. 23	0	W.	1	Clear	0	Dec. 24	0	SE.	1	Clear	0
	3	SE.	1	K.	10		3	SW.	1	Clear	0		3	S.	1	Fog	
	6	SE.	1	K.	10		6	NW.	1	C. K.	2		6	W.	1	Fog	
	9	S.	1	K.	10		9	N. NW.	1	Clear	0		9	NW.	1	Haze	
	Noon	SW.	1	C. K.	10		Noon	S. SE.	1	C. K.	1		Noon	W. NW.	4	C. K.	1
	3	SE.	1	N.	10		3	S.	1	C. K.	2		3	NW.	3	C. K.	1
	6	S.	1	C. K.	4		6	SE.	1	C. K.	8		6	W. NW.	3	Clear	0
	9	SW.	1	Clear	0		9	S. SE.	1	Clear	0		9	W. NW.	1	Clear	0
Dec. 25	0	W. NW.	3	Clear	0	Dec. 26	0	E.	1	Clear	0	Dec. 27	0	NE.	1	K.	10
	3	W. NW.	3	Clear	0		3	E.	1	C. K.	4		3	NE.	1	C. K.	10
	6	W.	2	Clear	0		6	S.	1	C. K.	10		6	NW.	1	Fog	
	9	NW.	2	Clear	0		9	S.	1	C. K.	8		9	NW.	1	C. K.	9
	Noon	NW.	1	Clear	0		Noon	S.	1	N.	10		Noon	SE.	1	K.	10
	3	W. NW.	1	Clear	0		3	S.	1	N.	10		3	S. SE.	1	C. K.	10
	6	E.	1	S.	1		6	S.	1	N.	10		6	S. SE.	1	K.	10
	9	NE.	1	C. S.	2		9	S.	1	N.	10		9	S.	1	Fog	

REMARKS.

December 13. Light rain at 8^h p. m.
14. Light snow-squalls at 2^h p. m.; amount, 0.028 inch.
16. Rain at $9^h\ 40^m$ p. m.; amount, 0.060 inch. Lunar rainbow at $11^h\ 50^m$ p. m.; altitude of moon about 15°.
19. Lunar halo at 8^h p. m.
20. Rain at 9^h a. m.; amount, 0.850 inch.
22. Light shower at $5^h\ 30^m$ p. m.; amount, 0.014 inch.
26. Rain at noon; amount, 0.538 inch.

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1874. Dec. 28	0	SE.	1	Fog		1874. Dec. 29	0	W.	1	N.	10	1874. Dec. 30	0	NW.	3	C. K.	10
	3	SE.	1	Fog			3	SW.	1	Fog			3	NW.	2	C. K.	6
	6	E.	1	Fog			6	S.	1	Fog			6	NW.	1	C. K.	9
	9	S.	1	Fog			9	NW.	3	C. K.	10		9	N. NW.	2	C. K.	2
	Noon	S.	3	C. K.	7		Noon	NW.	3	C. K.	9		Noon	NW.	3	C. K.	4
	3	S.	2	C. K.	2		3	NW.	3	C. K.	9		3	NW.	2	C. K.	10
	6	S.	2	S.	1		6	NW.	2	C. K. S.	4		6	NW.	2	C. K.	10
	9	S. SW.	1	K.	1		9	NW.	2	C. K. S.	8		9	NW.	3	C. K.	8
Dec. 31	0	NW.	3	K.	10												
	3	NW.	3	C. S.	4												
	6	NW.	2	C. K.	4												
	9	NW.	2	C. K.	4												
	Noon	NW.	2	C. K.	4												
	3	N. NW.	1	C. K.	4												
	6	N.	1	C. S.	1												
	9	N. NE.	1	Clear	0												

REMARKS.

December 28. Rain in the morning; amount, 0.256 inch.

METEOROLOGICAL OBSERVATIONS.

MEAN MONTHLY AND ANNUAL RESULTS.

1874.

TABLE I.

Monthly Means of Barometric Pressure.

Date.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.	Means.
1874.	in.	in.	in.	in.	in.	in.	in.	in.	in.
January . .	30.106	30.095	30.094	30.129	30.099	30.063	30.090	30.103	30.097
February . .	30.075	30.071	30.093	30.124	30.103	30.052	30.064	30.076	30.082
March . . .	29.943	29.938	29.954	29.986	29.955	29 902	29.910	29.947	29.942
April. . . .	29.962	29.959	29.971	29.998	29.967	29.927	29.929	29.960	29.959
May	29.908	29.893	29.917	29.929	29.901	29.858	29.827	29.892	29.891
June	29.891	29.880	29.907	29.922	29.908	29.867	29.862	29.892	29.891
July	29.939	29.934	29.955	29.963	29.944	29.910	29.899	29.925	29.934
August. . .	29.936	29.930	29.953	29.966	29.944	29.916	29.918	29.942	29.938
September .	30.004	29.999	30.013	30.033	30.006	29.968	29.969	29.997	29.998
October . .	30.033	30.030	30.048	30.078	30.042	30.004	30.019	30.041	30.037
November .	30.105	30.097	30.115	30.147	30.105	30.076	30.105	30.127	30.109
December .	30.085	30.074	30.098	30.135	30.091	30.068	30.085	30.126	30.092
Annual means.	29.998	29.991	30.009	30.033	30.003	29.967	29.972	30.002	29.997

TABLE II.

Monthly Means of Dry Thermometer.

Date.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.	M'ns.
1874.	°	°	°	°	°	°	°	°	°
January . .	35.1	34.1	33.1	34.8	42.5	43.6	38.7	36.4	37.3
February . .	32.9	31.8	30.8	32.4	39.9	45.7	37.0	34.7	36.1
March . . .	39.0	37.0	36.4	40.8	47.3	51.0	46.4	41.4	42.4
April. . . .	41.2	39.6	39.2	45.3	50.0	52.3	49.0	44.5	45.1
May	54.8	52.2	51.9	61.7	68.7	70.0	66.1	59.9	60.7
June	69.0	66.4	66.5	76.0	80.5	82.6	79.1	71.7	74.0
July	70.1	67.5	67.8	77.8	83.6	84.8	80.6	73.3	75.7
August. . .	65.9	63.4	62.0	73.9	81.0	83.2	76.6	69.3	71.9
September .	63.9	62.1	61.0	69.9	77.5	79.1	71.7	66.3	68.9
October . .	49.0	46.8	45.5	53.3	64.1	66.0	57.1	51.3	54.2
November .	38.6	37.2	35.5	39.9	50.4	51.2	45.1	40.3	42.3
December .	33.6	32.0	31.2	34.1	41.7	42.5	37.7	35.0	36.0
Annual means.	49.5	47.6	46.8	53.5	60.7	62.8	57.3	52.1	53.8

TABLE III.

Monthly Means of Wet Thermometer.

Date.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.	°	°		°	°	°	°	°
January . .	34.5	33.7	32.8	34.5	39.5	40.2	37.0	35.3
February . .	32.4	31.5	30.4	32.0	37.4	38.2	35.8	33.4
March . . .	37.3	35.7	35.2	38.3	42.7	45.0	42.0	42.3
April. . . .	40.2	39.0	38.7	42.7	46.1	47.2	45.5	42.8
May	53.2	51.2	51.2	56.8	61.2	62.5	60 0	56.5
June	67.5	65.5	65.6	70.9	73.6	74.9	72.8	68.8
July	68.0	66.8	67.0	71.8	73.9	74.4	72.4	69.8
August. . .	63.9	62.4	61.2	67.4	69.2	70.4	68.4	65.4
September .	63.2	61.6	60.7	66.4	69.2	69.4	66.8	64.1
October . .	48.4	46.9	45.5	51.2	57.4	58.7	53.5	49.9
November .	37.8	36.7	35.3	38.7	46.4	46.1	42.1	38.7
December .	33.1	32.1	32.0	33.5	38.3	38.9	36.0	34.3
Annual means.	48.3	46.9	46.3	50.4	54.6	55.5	52.7	50.1

TABLE IV.

Monthly Means of Sun Thermometer.

Date.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.	°	°	°	°	°	°	°	°
January . .	33.2	32.3	31.3	42.2	83.2	73.2	44.5	35.4
February . .	32.7	30.9	29.5	41.5	88.2	89.3	71.3	35.3
March . . .	37.1	35.0	34.5	72.1	93.0	96.9	77.8	42.2
April. . . .	40.7	38.3	39.1	74.0	98.6	92.9	69.5	46.0
May	52.4	49.7	55.8	98.7	118.1	113.6	87.1	59.8
June	66.5	63.5	72.7	119.5	130.3	131.5	101.3	70.4
July	68.3	64.9	71.4	122.6	137.6	135.3	108.9	78.3
August . . .	65.7	62.9	62.6	118.6	135.9	139.6	127.4	79.7
September .	63.4	60.9	60.0	108.0	128.6	128.8	115.4	68.6
October . .	47.8	45.5	43.4	94.5	119.2	118.1	89.3	50.5
November .	37.8	35.9	34.5	70.4	102.3	101.7	65.0	41.0
December .	33.5	31.9	30.6	58.8	91.9	91.3	56.9	35.4
Annual means.	48.3	46.0	47.1	85.1	110.6	109.4	84.5	53.6

TABLE V.

Amount of Rain and Snow in 1874.

Month.	Rain and Melted Snow.	Snow.
	in.	in.
January	2.282	3.00
February	2.315	13.75
March	1.932	
April	6.579	2.50
May	2.876	
June	3.392	
July	2.228	
August	1.494	
September	8.718	
October	0.225	
November	1.668	
December	2.318	
Total	36.027	19.25

TABLE VI.

Showing the number of times that the wind blew from the NORTH *at the hours of observation.*

Month.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.								
January . . .	2	1	0	3	3	2	0	0
February . . .	4	4	6	4	1	1	4	2
March. . . .	0	2	0	1	1	1	0	0
April	3	4	4	1	2	2	3	3
May	1	4	4	5	2	1	1	1
June	1	2	2	1	0	2	0	1
July	2	2	0	3	2	1	1	0
August . . .	2	3	2	0	3	5	4	4
September . .	6	2	4	3	5	2	2	1
October . . .	2	2	3	6	2	3	2	2
November . .	4	3	3	5	3	1	3	4
December . .	2	1	1	5	3	5	4	2
Total . . .	29	30	29	37	27	24	24	20

Showing the number of times that the wind blew from the NORTHEAST *at the hours of observation.*

Month.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.								
January . . .	2	4	2	3	0	1	4	3
February . . .	4	5	6	6	2	6	2	4
March. . . .	3	2	1	1	0	1	1	3
April	5	7	2	4	7	6	5	5
May	4	3	3	5	1	2	2	1
June	2	2	3	2	2	0	2	1
July	2	0	0	1	0	0	1	2
August . . .	2	3	4	7	6	4	4	2
September . .	3	6	4	3	1	3	3	4
October . . .	2	3	3	1	2	0	4	6
November . .	1	1	2	3	1	1	3	2
December . .	1	1	0	0	0	0	0	4
Total . . .	31	37	30	36	22	24	31	37

Showing the number of times that the wind blew from the EAST *at the hours of observation.*

Month.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.								
January . . .	2	1	2	0	2	5	2	4
February . . .	2	2	0	0	2	0	3	1
March. . . .	1	1	3	4	2	2	2	2
April	4	3	5	3	0	2	1	2
May	0	1	0	0	3	3	2	3
June	3	0	0	1	1	3	3	6
July	1	1	1	1	1	0	1	1
August . . .	2	3	0	4	4	3	4	3
September . .	2	1	5	5	2	2	7	5
October . . .	2	3	1	3	3	4	5	2
November . .	1	1	0	1	3	3	4	4
December . .	1	2	2	0	0	0	1	0
Total . . .	21	19	19	22	23	27	35	33

Showing the number of times that the wind blew from the SOUTHEAST *at the hours of observation.*

Month.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.								
January . . .	2	1	2	2	2	1	1	0
February . . .	1	1	0	1	2	2	1	2
March. . . .	2	3	2	2	3	3	4	5
April	1	2	2	3	4	2	3	4
May	3	2	0	4	6	5	3	2
June	6	1	1	3	3	4	2	1
July	4	1	2	3	2	2	3	4
August . . .	1	0	2	4	3	2	4	2
September . .	2	4	0	5	3	5	3	2
October . . .	3	0	0	4	4	3	3	3
November . .	5	1	1	1	2	5	5	2
December . .	4	2	2	4	3	4	2	2
Total . . .	34	18	14	36	35	38	34	29

Showing the number of times that the wind blew from the SOUTH *at the hours of observation.*

Month.	0h.	3h.	6h.	9h.	Noon	3h.	6h.	9h.
1874.								
January . . .	5	7	6	6	9	7	9	7
February . . .	3	3	6	4	5	6	4	5
March. . . .	7	4	3	2	7	6	5	2
April	5	2	2	4	4	7	5	3
May	9	6	7	4	5	5	7	9
June	7	10	8	7	10	12	10	9
July	11	10	11	12	13	13	12	12
August . . .	6	3	5	8	8	7	6	8
September . .	6	0	1	5	11	6	7	7
October . . .	6	3	4	4	6	8	5	4
November . .	4	6	4	4	8	8	4	3
December . .	4	3	4	9	9	10	13	11
Total . . .	73	57	61	69	95	95	87	80

Showing the number of times that the wind blew from the SOUTHWEST *at the hours of observation.*

Month.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.								
January . . .	7	4	5	4	2	3	3	4
February . . .	2	3	1	2	2	3	2	1
March. . . .	2	1	1	3	0	2	1	2
April	1	1	3	1	2	1	1	3
May	2	3	4	1	1	3	2	1
June	1	2	1	4	1	2	2	0
July	3	6	5	4	3	5	6	5
August . . .	1	4	0	0	1	0	1	3
September . .	2	4	4	1	0	1	2	1
October . . .	0	1	1	1	2	0	0	1
November . .	1	1	4	2	1	1	1	2
December . .	2	3	0	2	2	0	1	1
Total . . .	24	33	29	25	17	21	22	24

TABLE VI—Continued.

Showing the number of times that the wind blew from the WEST *at the hours of observation.*

Month.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.								
January	3	4	1	5	7	5	4	5
February	2	2	2	4	5	1	1	2
March	4	7	6	3	9	8	3	3
April	3	5	6	7	4	3	4	3
May	5	3	7	5	8	8	7	7
June	6	9	11	5	9	5	4	4
July	3	8	9	3	8	6	3	2
August	4	5	6	2	3	3	2	2
September	2	2	2	3	4	7	3	6
October	6	6	4	4	5	6	3	5
November	2	2	2	4	3	3	1	2
December	5	6	6	2	4	2	3	4
Total	45	59	62	47	69	57	38	45

Showing the number of times that the wind blew from the NORTHWEST *at the hours of observation.*

Month.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.								
January	8	9	13	8	6	7	8	8
February	10	8	7	7	9	9	10	11
March	12	10	15	15	9	8	15	14
April	8	6	6	7	7	7	8	7
May	7	9	7	7	5	4	6	7
June	5	5	5	8	4	3	8	8
July	5	3	3	4	2	4	4	5
August	13	10	12	6	3	7	6	7
September	7	11	10	5	4	4	3	4
October	10	13	15	8	7	7	9	8
November	11	15	14	10	8	8	10	11
December	12	13	16	9	10	10	8	7
Total	108	112	123	94	74	78	95	97

Showing the number of times that it was CALM *at the hours of observation.*

Month.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.								
January	0	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0	0
March	0	0	0	0	0	0	0	0
April	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0
June	0	0	0	0	0	0	0	1
July	0	0	0	0	0	0	0	0
August	0	0	0	0	0	0	0	0
September	0	0	0	0	0	0	0	0
October	0	0	0	0	0	0	0	0
November	0	0	0	0	0	0	0	0
December	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	1

TABLE VII.

Showing the number of times that it was CLEAR *at the hours of observation.*

Month.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.								
January	6	8	7	4	3	3	2	8
February	4	5	3	3	2	5	1	6
March	11	9	6	5	4	7	6	15
April	4	5	4	4	3	2	2	4
May	12	11	8	4	2	1	3	10
June	8	7	4	3	1	4	4	8
July	9	8	3	8	2	0	5	10
August	10	10	5	8	2	2	6	10
September	11	10	1	6	1	1	3	8
October	9	12	5	3	1	2	3	9
November	7	7	6	5	4	4	6	8
December	11	11	7	6	4	4	6	11
Total	102	103	59	59	29	35	47	107

Showing the number of times that CIRRUS *clouds prevailed at the hours of observation.*

Month.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.								
January	1	0	1	0	1	2	0	1
February	3	0	0	0	2	3	2	0
March	5	1	0	0	2	3	0	1
April	1	1	0	2	3	0	0	1
May	2	0	1	0	2	2	2	3
June	4	1	2	6	2	0	2	2
July	3	2	4	4	1	0	2	3
August	1	0	2	6	5	5	2	2
September	3	4	1	1	2	2	0	2
October	2	1	1	1	1	0	1	2
November	0	2	0	1	0	0	1	1
December	0	2	0	0	0	2	1	0
Total	25	14	12	21	21	19	13	18

Showing the number of times that CIRRO-CUMULUS *clouds prevailed at the hours of observation.*

Month.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.								
January	15	10	10	15	22	16	10	10
February	11	11	12	12	12	11	11	10
March	7	9	13	11	15	14	11	8
April	12	9	10	9	12	14	16	9
May	8	8	12	13	15	20	11	11
June	14	14	12	16	22	24	18	12
July	10	14	11	14	24	23	21	10
August	13	13	14	9	20	17	14	11
September	4	5	8	13	20	17	13	11
October	8	7	6	12	21	19	11	9
November	11	9	7	9	15	16	6	10
December	7	9	11	15	21	19	10	7
Total	120	118	126	148	219	210	152	118

TABLE VII—Continued.

Showing the number of times that CIRRO-STRATUS *clouds prevailed at the hours of observation.*

Month.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.								
January	0	1	1	1	1	1	6	1
February	1	1	3	3	4	0	5	1
March	0	0	3	3	0	2	4	0
April	2	1	0	0	0	2	0	1
May	0	1	0	1	0	0	5	0
June	0	1	2	0	0	0	2	0
July	1	3	4	1	0	0	1	2
August	0	1	1	0	0	0	0	1
September	0	2	1	0	0	0	1	0
October	0	1	5	1	0	0	5	0
November	0	0	2	1	0	1	2	0
December	1	1	1	0	0	0	2	2
Total	5	13	23	11	5	6	33	8

Showing the number of times that CUMULUS *clouds prevailed at the hours of observation.*

Month.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.								
January	3	7	6	2	2	2	4	5
February	5	6	6	3	3	5	3	4
March	4	6	3	4	4	1	2	3
April	4	4	1	2	3	4	3	5
May	5	3	4	6	2	0	1	1
June	2	2	3	1	1	0	1	3
July	4	1	2	2	0	2	1	1
August	2	1	2	3	1	2	4	3
September	6	4	3	1	2	2	5	6
October	4	4	4	3	0	0	0	2
November	5	3	2	2	1	0	2	2
December	5	3	4	2	1	0	2	2
Total	49	44	40	31	20	18	28	37

Showing the number of times that CUMULO-STRATUS *clouds prevailed at the hours of observation.*

Month.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.								
January	0	0	0	0	0	0	2	0
February	0	0	0	0	0	0	0	0
March	0	0	1	0	0	1	3	0
April	0	0	0	0	1	0	1	0
May	0	0	0	0	0	0	0	0
June	0	1	1	0	0	0	1	0
July	1	1	0	1	1	0	0	0
August	0	1	0	0	0	0	0	1
September	1	1	1	0	1	1	0	0
October	1	0	1	0	1	1	2	0
November	0	0	2	0	2	3	1	0
December	1	1	4	3	2	2	3	1
Total	4	5	10	4	8	8	13	2

Showing the number of times that STRATUS *clouds prevailed at the hours of observation.*

Month.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.								
January	0	0	2	2	0	1	2	0
February	0	0	0	0	0	0	0	0
March	1	2	0	0	1	0	1	1
April	0	0	1	0	0	0	0	0
May	0	0	0	0	0	0	0	0
June	0	1	0	0	0	0	0	2
July	2	0	0	0	0	0	0	1
August	0	0	0	0	0	0	0	0
September	1	0	0	0	0	0	1	1
October	0	0	0	0	0	0	0	2
November	0	0	1	0	0	0	3	1
December	2	1	1	1	2	2	3	0
Total	6	4	5	3	3	3	10	8

Showing the number of times that NIMBUS *clouds prevailed at the hours of observation.*

Month.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.								
January	4	4	3	5	2	5	5	4
February	2	3	3	6	5	3	3	3
March	2	2	4	6	5	3	3	3
April	4	7	10	8	5	5	4	5
May	2	4	2	1	3	2	3	4
June	2	3	2	3	2	2	2	3
July	1	3	3	1	2	4	1	4
August	2	3	3	2	2	4	3	2
September	3	4	7	5	2	4	3	2
October	0	3	6	1	0	0	0	0
November	1	5	7	6	1	1	3	2
December	4	3	4	3	2	3	3	5
Total	27	44	54	47	31	36	33	37

Showing the number of times that HAZE *prevailed at the hours of observation.*

Month.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1874.								
January	2	1	1	2	0	1	0	2
February	2	2	1	2	1	1	3	4
March	1	2	1	2	0	0	1	0
April	0	0	1	2	0	0	0	2
May	2	4	4	6	7	6	6	2
June	0	0	4	2	1	0	0	0
July	0	0	4	1	1	2	0	0
August	3	3	4	3	1	1	2	1
September	1	0	8	4	2	3	4	0
October	7	3	3	10	7	9	9	7
November	6	4	3	6	7	5	6	6
December	1	1	0	2	0	0	1	3
Total	25	20	34	42	27	28	32	27

METEORS.

1874.

METEORS OBSERVED IN 1874.

Owing to the lack of assistance, no systematic observations could be continued throughout the year; but arrangements were made to observe the August and November showers, and a record was made of all observations of sporadic meteors.

AUGUST SHOWER.

August 9.—Sky clear.

From $9^h\ 18^m$ to $10^h\ 36^m$ two observers saw 21 meteors.
$10\ 36$ to $15\ 0$ one observer saw 32 "

August 10.—Sky clear till $14^h\ 20^m$; after $14^h\ 30^m$ a dense fog.

From $8^h\ 27^m$ to $11^h\ 16^m$ two observers saw 109 meteors.
$11\ 16$ to $11\ 40$ one observer saw 9 ".
$13\ 9$ to $14\ 15$ one observer saw 16 "

August 11.—Sky clear till 10^h.

From $8^h\ 15^m$ to $10^h\ 0^m$ one observer saw 13 meteors.

About one-half of these meteors were conformable to the August radiant.

No observations were obtained of the November shower.

The following were the only miscellaneous meteors of which a record was made during the year:

Date.	Hour.	Minute.	Observer.	Magnitude.	Color.	Duration.	Appearance and Duration of Train.	Length of Path.	Course of Meteor.
1874.						s.		°	
May 25	9	13	Horrigan.	1	Orange and violet.	3.0	Long train.	30	From near Polaris south-easterly.
Aug. 10	15	20	Holden.	15′ in diam.	Greenish-white.	3.0	Continuous train.	30	Seen through the slit of great dome from zenith toward S. SE.

APPENDIX

TO

METEOROLOGICAL OBSERVATIONS.

1874.

APPENDIX TO METEOROLOGICAL OBSERVATIONS, 1874.

COMPARISON OF RAIN-GAUGES.

BY

PROF. J. R. EASTMAN, U. S. N.

On January 1, 1874, two sets of rain-gauges were placed in position for the purpose of testing the relative merits of different sizes of gauges, and of comparing the quantities of rain obtained at different altitudes under variable atmospheric conditions. Each set consisted of seven gauges. Each gauge was made of tin, and consisted of a cylinder, about 1.5 inch in length, joined at the bottom to a conical base 5.5 inches long, terminating in a tube 0.15 inch in diameter, through which the rain passed to the receiver. This tube fitted closely into the neck of a glass bottle, which was used as a receiver. Near the lower part of the conical base, a conical shield was soldered, which, extending 1.5 inch below the top of the receiver, prevented any water from entering except through the gauge.

The gauges, with the receivers, were placed in a box with a gable-roof, and, along the ridge, holes were cut to receive the gauges. These holes were so adjusted as to fit the gauges just above the shield; and, while the roof supported them in a vertical position with the upper surfaces in the same plane, the slope prevented any rain from splashing into the gauges on striking the roof. The approximate diameters of the gauges in each set were as follows:

No. 1,	6.0 inches.
2,	4.0 "
3,	3.0 "
4,	2.5 "
5,	2.0 "
6,	1.5 "
7,	1.0 "

Set A was placed on the southwest corner of the roof of the central building of the Observatory, with the upper surface of the gauges 34.1 feet above the surface of the ground.

Set B was situated on the lawn 77.5 feet southwest of the southwest corner of the central building, the upper surface of the gauges 1.9 feet above the ground. The slope of the lawn from the corner of the building to set B is equal to the height of set B above the ground, so that set A was 34.1 feet above set B.

The scale with which the rain was measured was made by James Green, of New York, and consisted of two glass cylinders mounted side by side in a frame. The larger was one inch in diameter, and graduated to 0.025 cubic inch; the other was one-half inch in diameter, and graduated to 0.010 cubic inch.

The area of each gauge was carefully determined from three independent measurements, one after the work was finished, and the following factors deduced, by which the quantity of rain measured from each gauge, in cubic inches, was multiplied in order to obtain the actual amount of rain on a square inch.

Factors.

	A.	B.
No. 1,	0.035	0.035
2,	0.080	0.079
3,	0.136	0.135
4,	0.200	0.198
5,	0.304	0.304
6,	0.537	0.551
7,	1.155	1.156

The receivers for No. 1 in each set overflowed in several instances before larger ones were procured, and those gauges therefore cannot be compared with the others throughout the year. During the heavy storm on September 16, it became necessary to measure the rain during the progress of the storm in order to prevent the overflowing of the receivers; but, unfortunately, the gauges were so much disturbed that; the results were very unreliable, and have not been used.

From Nos. 6 and 7, in each set, much less rain was obtained than from the others, and they have, consequently, been excluded from the discussion.

As the list of quantities measured after each rain would occupy too much space it has been deemed sufficient to present the data from each set, as follows:

Assuming the mean of the amounts obtained from Nos. 2, 3, 4, and 5 in each set as a standard, the following table exhibits the percentage of rain derived from each gauge:*

A.		B.	
No. 2,	1.014	No. 2,	1.001
3,	0.998	3,	1.000
4,	1.007	4,	1.014
5,	0.981	5,	0.985

From this table it will be seen that there is but little difference between the quantities obtained from Nos. 2, 3, and 4, and even the amount from No. 5 is but a little less than the mean. We conclude, then, that there is but little choice between Nos. 2, 3, and 4, but that the diameter of the gauge should not be less than 2.5 inches.

* The mean percentage obtained from No. 6, in sets A and B, was 0.966, and from No. 7, 0.912.

If we compare gauges 2, 3, 4, and 5 in the two sets, assuming the quantities obtained from set B as the standard, the relative amounts for the whole year are as below:

	A.	B.
No. 2, - - - - - -	0.887	1.000
3, - - - - - -	0.900	1.000
4, - - - - - -	0.905	1.000
5, - - - - - -	0.902	1.000

The following table shows the percentage obtained in gauges 2, 3, 4, and 5 in set A, when compared with similar gauges in set B, together with the estimated velocity of the wind, according to the scale used in the Meteorological Register of the Observatory, and remarks on the nature of the phenomenon:

Date.	Percentage.	Wind.	Remarks.	Date.	Percentage.	Wind.	Remarks.
1874.				1874.			
Jan. 1	0.89	1	Rain.	June 11	0.95	1	Shower.
7	0.87	1	Rain and snow.	12	0.97	1	Shower.
19	0.87	2	Rain.	20	0.84	2	Steady rain.
Feb. 2	0.89	1	Rain, sleet, and snow.	July 4	0.95	5	Heavy shower.
6	0.95	2	Snow.	11	0.93	4	Shower.
13	0.85	1	Rain.	21	0.93	1	Shower.
21	0.86	1	Rain.	28	0.86	1	Steady rain.
25	0.71	2	Snow.	Aug. 8	0.77	3	Drizzling rain.
Mar. 3	0.74	0	Steady rain.	23	0.92	1	Shower.
7	0.78	2	Steady rain.	31	0.89	1	Shower.
19	0.87	1	Heavy rain.	Sept. 8	1.00	1	Shower.
20	0.75	1	Steady rain.	20	0.96	1	Shower.
April 1	0.89	1	Rain and snow.	29	0.93	3	Shower.
9	0.93	1	Heavy showers.	Oct. 10	0.93	1	Shower.
17	0.89	1	Heavy shower.	30	0.80	1	Drizzling rain.
20	0.92	1	Shower.	Nov. 20	0.93	1	Shower.
25	0.92	2	Shower.	29	0.83	3	Steady rain.
29	0.74	3	Rain and snow.	Dec. 7	0.96	1	Shower.
May 5	0.87	3	Steady rain.	20	0.95	2	Shower.
24	0.95	1	Shower.	26	0.93	1	Shower.
June 6	0.87	1	Steady rain.	28	0.92	1	Shower.

Arranging the data from this table according to the atmospheric conditions attending the fall of rain or snow, we find the mean percentage of rain obtained with the gauges of set A, during steady, drizzling rains, was 0.805; and during sudden showers, generally accompanied by high wind, the mean percentage was 0.925.

From these observations, it appears that the wind has little, if any, influence on the relative amounts of rain obtained in gauges near the surface of the ground and at an elevation of 34 feet.

It also appears that the greatest difference of quantities is obtained when the air is highly saturated with moisture, the precipitation is slow and continuous for several hours; while the least difference occurs in the case of sudden showers of short duration, when the precipitation is very rapid, and when the air was quite free from moisture but a few minutes before the rain began to fall.

APPENDIX I.

INSTRUMENTS AND PUBLICATIONS

OF THE

UNITED STATES NAVAL OBSERVATORY.

1845–1876.

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I.—FOUNDING OF THE OBSERVATORY.

[Condensed from Appendix IV of the volume of Observations for 1871: "Founding and Progress of the Observatory," By Prof. J. E. NOURSE, U. S. N.]

Congressional action for instituting a National Observatory originated in the earliest movements for establishing a first meridian in the United States.

Memorials towards this object, offered by Mr. William Lambert of Virginia, were presented in the House of Representatives as early as the years 1810, 1815, and 1818. They were approved by the House, and Mr. Lambert was appointed to make astronomical observations, in order to ascertain the longitude of the Capitol from Greenwich. In his reports of these observations, transmitted to Congress by President Monroe in 1822 and 1823, he took strong grounds in advocacy of the founding of an Observatory.[1]

Mr. F. R. Hassler, the first Superintendent of the United States Coast Survey, in his report made on returning from the purchase of his instruments in London, 1816, recommended the establishment of an Observatory in the city of Washington "as a national object, a scientific ornament, and a means for nourishing an interest for science in general."[2] Mr. Hassler's views were supported by many eminent men, and particularly by President Madison and Secretary Dallas, who were desirous that this part of his plans, in connection with the work of the Coast Survey, should receive immediate execution. Mr. Hassler submitted a detailed plan for an Observatory, and selected for it a site north of the Capitol.

In 1825 President John Quincy Adams, in his first message to Congress, urged the establishment of an Astronomical Institution, referring in his recommendation to the expectations entertained by the first President of the United States, and his selection of a site for a Scientific Institution at the Capital.

In 1838 Mr. Adams, then a member of the House of Representatives, renewed his efforts for the object by urging on President Van Buren to incorporate the idea of an Observatory within the plans for the appropriation of the Smithsonian Fund. In 1842 he made an extended report from the committee appointed upon this bequest, advocating for this purpose the appropriation of a large part of the interest accruing from the fund.

[1] Journal of the House of Representatives, Eighteenth Congress, First Session; Message of the President of the United States, February 25, 1824.

[2] Transactions of American Philosophical Society for 1825.

Recommendations for the founding of an Observatory had also been made by the Secretary of the Navy, Mr. Branch, in 1830, when communicating the wishes of the Board of Navy Commissioners, and by his successors, Mr. Dickerson, in 1835, and Mr. Paulding, in 1838.

In the year last named, a series of astronomical and meteorological observations was commenced, by orders of the Navy Department, in the small Observatory connected with the Depot of Charts, under charge of Lieut. James M. Gilliss, U. S. N., near the Capitol. These observations, undertaken in connection with the interests of the Exploring Expedition to the Southern Hemisphere, then sailing under Captain Wilkes, U. S. N., were continued to the year 1842. They brought about the establishment of the present Institution.[1]

The Naval Observatory was authorized by the act of Congress approved by the President August 18, 1842. The full purposes of this act were declared in the report of the committee of Congress[2] recommending the appropriation, which report was unanimously accepted, and their bill passed without discussion. In this report astronomical work in its full scope was provided for in express terms.

The Secretary of the Navy, Hon. A. P. Upshur, directed Lieut. J. M. Gilliss, U. S. N., who had been in charge of the astronomical and meteorological observations before named, to prepare a plan for an Observatory. His report, presented November 23, 1843, was accepted by the Department, and the construction of a building, with its equipments for astronomical and meteorological work, was placed in his charge. The act of Congress provided for its erection at a cost not exceeding the sum of $25,000.

The act further provided that the institution might be located on any portion of the public land in the District of Columbia which the President of the United States should deem suited to the purpose. On the recommendation of Lieutenant Gilliss, reservation No. 4, as marked on the original plan of Washington City, was selected by President Tyler as the site of the Observatory.

This reservation, which has otherwise a marked historic interest, had long been recognized as the proposed seat of a scientific institution. For this purpose it was designated by General Washington, in his letter of October 21, 1796, to the Commissioners appointed to lay out the Capital. It had been, therefore, known in Washington City as "University Square."

It lies on the north bank of the Potomac, in the southwestern section of the city, the north front on E street, being 810 feet in length; the east, on Twenty-third street, 1,103 feet; and the west, on Twenty-fifth street, 620 feet. The area inclosed embraces a little more than nineteen acres.

"The site of the main building has a north horizontal range of 1.25 miles, and a south range of 8 miles. It is 267 feet from the north, 320 feet from the east, 490 feet from the west, and 900 feet from the south inclosure." The hill is of gravel formation, with a surface-stratum of dry, brittle clay.

[1] The two volumes of these Observations, published by order of Congress, were the subjects of the highest commendation by astronomers in Europe as well as in the United States.

[2] Report of Naval Committee, House of Representatives, No. 449, Twenty-seventh Congress, Second Session.

The central building is 50 feet 8 inches square on the outside from the foundation to a height of 2 feet 6 inches above ground, and thence to the top of the walls, 50 feet square. All the foundations to the ground-line are of blue rock, 2 feet thick; the remainder of the outside walls are of brick, 18 inches thick, finished in the best manner; and the partition-walls of brick, 14 inches thick. It is two stories and a basement high, with a parapet and balustrade of wood around the top, and is surmounted by a revolving dome, 23 feet in diameter, resting on a circular wall built up to a height of 7 feet above the roof.

To the east, west, and south sides of this central building wings were built by Lieutenant Gilliss, the eastern and the western being each 26 feet in length and 21 feet in width, and the south wing being 21 feet long, with the same breadth and height as the others.

Additions to the Observatory, as thus originally constructed, have been made at different periods, in accordance with the extension of its astronomical work. In the year 1847 quarters for the Superintendent were erected east of the main building. In 1848 the east wing was extended 24 feet, connecting these quarters with the main building and furnishing a store-room for chronometers. The rating and daily care of these, and their dispatch to United States vessels when put in commission, are intrusted to the officer in charge of this room.

Further extensions of the building have been made by the erection of the observing-room for the Transit Circle, in 1868, and that of the large dome for the 26-inch Equatorial, completed, with its adjoining offices for computers, &c., in 1873.

Each of these latest extensions is described in connection with its instrument.

THE LIBRARY.

During the official visit of inquiry made by Lieutenant Gilliss, in 1843, to the Observatories in Europe, donations of nearly three hundred Astronomical and other Scientific volumes were offered to the Observatory then being founded at Washington.

The chief donors were, the Royal Astronomical Society, the Royal Society, the Admiralty, the East India Company, and the Directors of the Observatories at Greenwich, Berlin, Brussels, and Munich. More than seven hundred volumes were purchased by Lieutenant Gilliss.

The annual Exchanges of Publications made by the Observatory with most of the scientific Institutions of the world, and with authors of distinguished scientific treatises, have been the principal sources of increase up to the present date, at which the numbers in the Library exceed six thousand. These exchanges are building up a scientific Treasury, largely repaying the Government for its outlay in the publication of the Astronomical volumes.

In transmitting its foreign exchanges the Institution is indebted for the courteous offices of the Smithsonian, and for those of the Resident Legations.

II.—POSITION OF THE OBSERVATORY.[1]

The latitude deduced from observations made with the Mural Circle in 1845 and 1846 was, $+38^\circ\ 53'\ 39''.25$;[2] and that value has been employed in the reduction of all observations made with the Mural Circle down to the present time.

The observations made with the same instrument from 1861 to 1864, inclusive, give a latitude $0''.47$ less, viz, $+38^\circ\ 53'\ 38''.8$;[3] and this latter value is the one which has always been used in computing the published "Apparent North Polar Distances, obtained from Observations made with the Transit Circle." It should be remarked, however, that in the published tables of "Right Ascension, North Polar Distances, and Semi-diameters of the Sun, Moon, and Planets, deduced from Observations with the Transit Circle," and of "Corrections to the Right Ascensions and North Polar Distances of the American Ephemeris, given by Individual Observations of Stars with the Transit Circle," the final north polar distances depend upon the position of the pole determined, from all the observations of circumpolar stars made with the Transit Circle during the same year as those contained in the tables in question. In interpolating tabular positions of the moon and planets, the longitude of the Observatory from Greenwich is assumed to be $5^h\ 8^m\ 12^s.0$.

The point to which all differences of longitude, measured from the Observatory, are referred is the center of the dome. The most probable value of its latitude is $+38^\circ\ 53'\ 38''.8$, which has been determined from discussions of all the observations of circumpolar stars observed, both above and below the pole, with the Mural and Transit Circles during the years between 1861 and the present time.

For the determination of its longitude from Greenwich by the telegraph, the following data were communicated in an official letter of the Superintendent of the Coast Survey, dated August 10, 1872:

	h.	*m.*	*s.*
Determined in 1867	5	8	12.11
Determined in 1870			12.16
Determined in 1872			12.10
Mean	5	8	12.12

[1] The astronomical position of the Observatory here given appears in the "General Introduction" to each of the recent volumes.

[2] Washington Observations 1845, Appendix, page 116.

[3] Washington Observations 1864, Introduction, page 44.

III.—SUPERINTENDENTS OF THE OBSERVATORY.

Commander M. F. MAURY, from October 1, 1844, to April 20, 1861.
Captain J. M. GILLISS, from April 22, 1861, to February 9, 1865.
Rear-Admiral C. H. DAVIS, from April 28, 1865, to May 8, 1867.
Rear-Admiral B. F. SANDS, from May 8, 1867, to February 23, 1874.
Rear-Admiral C. H. DAVIS, from February 23, 1874, ——.

OFFICERS IN CHARGE OF INSTRUMENTS SINCE 1861.

The 9.6-inch Equatorial. Assistant Astronomer J. Ferguson; Professors Newcomb; Hall; Eastman.

The Prime Vertical.—Professors Hubbard; Newcomb.

The Transit Instrument.—Professor Yarnall.

The Mural Circle.—Professors Hubbard; Newcomb; Yarnall.

The Transit Circle.—Professors Newcomb; Hall; Harkness; Eastman.

The XXVI-inch Equatorial.—Professors Newcomb; Hall.

The Meteorological Instruments.—Professor J. R. Eastman.

The Chronometers and Nautical Instruments.—Very frequent changes have occurred in the orders of the officers of the line on duty at the Observatory in charge of the naval instruments and the charts.

At the date of the organization of the Hydrographic Office, 1866, after the transfer of the charts and other naval instruments, Commander A. W. Johnson was placed in charge of the *chronometers.* At the present date Lieutenant-Commander Charles H. Davis is in charge.

IV.—PUBLICATIONS OF THE OBSERVATORY.

1. VOLUMES OF OBSERVATIONS.

Vol. I.	Astronomical Observations for the year		1845	published in	1864
II.	Do.	do.	1846	do.	1851
III.	Do.	do.	1847	do.	1853
IV.	Do.	do.	1848	do.	1856
V.	Do.	do.	1849–1850	do.	1859
VI.	Do.	do.	1851–1852	do.	1867
*VII.	Results of Astronomical Observations for the years		1853–1860	do.	1872
VIII.	Astronomical and Meteorological Observations for		1861	do.	1862
IX.	Do.	do.	1862	do.	1863
X.	Do.	do.	1863	do.	1865
XI.	Do.	do.	1864	do.	1866
XII.	Do.	do.	1865	do.	1867
XIII.	Do.	do.	1866	do.	1868
XIV.	Do.	do.	1867	do.	1870
XV.	Do.	do.	1868	do.	1871
XVI.	Do.	do.	1869	do.	1872
XVII.	Do.	do.	1870	do.	1873
XVIII.	Do.	do.	1871	do.	1873
XIX.	Do.	do.	1872	do.	1874
XX.	Do.	do.	1873	do.	1875
XXI.	Do.	do.	1874	in press.	

2. SPECIAL OBSERVATIONS AND REPORTS.

Observation or report.	Author.	Appendix to volume for the year—
Superintendency of Commander Maury.		
A.—Observations on sun-spots	Rev. B. Sestini, S. J	1847
B.—Observations on the Mississippi River, at Memphis	Passed Midshipman R. A. Marr	
C.—Tables for facilitating reduction of apparent places of fixed stars to their mean places.	Professors J. H. C. Coffin and J. S. Hubbard.	
(Zones of stars observed at the National Observatory in 1846, reduced by Assistant Astronomer James Ferguson, published in 1860.)	Lieutenant L. Maynard and Professor J. S. Hubbard.	
Superintendency of Captain Gilliss.		
Longitude of United States Naval Observatory from moon culminations.	Professor S. Newcomb	1862
A.—Solar parallax from observations on the planet Mars, made near the opposition, 1862, with the equatorial.	Professor A. Hall	1863
A.—Solar parallax from observations on the planet Mars, made near the opposition, 1862, with the meridian-instrument.	Assistant Astronomer J. Ferguson	
B.—Orbit of Nemausa	Professor A. Hall	
Investigation of the latitude and longitude of the Observatory, and of the declination of certain circumpolar stars.	Professor S. Newcomb	1864

* This volume was published as Appendix II to the volume of Observations for the year 1871.

2. SPECIAL OBSERVATIONS AND REPORTS—Continued.

Observation or report.	Author.	Appendix to volume for the year—
Superintendency of Rear-Admiral Davis.		
Description of the Transit Circle	Professor S. Newcomb	1865
Investigation of the distance of the sun		
Discussion of the meteorological observations from 1842 to 1867	Professor J. R. Eastman	1866
Report on interoceanic canals and railroads	Rear-Admiral C. H. Davis	
Report on November meteors of 1866		
Superintendency of Rear-Admiral Sands.		
I.—Report on the difference of longitude between Washington and Havana.	Professor W. Harkness	1867
II.—Reports on the total solar eclipse in the United States, August 7, 1869.	Professors S. Newcomb, A. Hall, W. Harkness, J. R. Eastman, and others.	
III.—Positions of fundamental stars deduced from Washington observations, 1862–'67.	Professor S. Newcomb	
IV.—Catalogue of 151 stars in Præsepe	Professor A. Hall	
Catalogue of stars observed by the United States Astronomical Expedition to the Southern Hemisphere, 1850–'52.	Lieutenant James M. Gilliss, Superintendent; Lieutenant A. McRae, Master S. Ledyard Phelps, and Mr. E. R. Smith, assistants.	1868
I.—Reports on total solar eclipse in Europe of December 22, 1870	Professors Newcomb, Hall, Harkness, and Eastman.	1869
II.—Zones of stars observed with the Mural Circle in the years 1846, 1847, 1848, and 1849.	Professor J. H. C. Coffin, Lieutenant T. J. Page, Lieutenant C. Steedman.	
I.—Report on the difference of longitude between Washington and Saint Louis.	Professor W. Harkness	1870
II.—Reports on observations of Encke's Comet, during its return in 1871.	Professors Hall and Harkness	
III.—Right ascensions of the equatorial fundamental stars, and corrections necessary for reduction of right ascensions of different catalogues to a mean homogeneous system.	Professor S. Newcomb	
IV.—Zones of Stars observed at the United States Naval Observatory with the Meridian Transit Instrument, in years 1846, 1847, 1848, and 1849.	Lieutenant J. J. Almy, Lieutenant W. A. Parker, Professors R. Keith, Mark H. Beecher, J. S. Hubbard.	
Report on November meteors of 1867	Professors Newcomb, Harkness, and Eastman.	
Discussions of West India Cyclone of October 29 and 30, 1867	Professor J. R. Eastman	
Report on November meteors of 1868		
I.—Zones of stars observed at the United States Naval Observatory with the Meridian Circle, in the years 1847, 1848, and 1849. [This Appendix, edited by Professor A. Hall, U. S. N., completes the Zone Observations commenced in 1847, and embraces those published in 1860, 1869, 1870, and 1871; those published in 1869, 1870, 1871 were reduced by Dr. B. A. Gould.]	Observers: Professor J. Major, Lieutenant L. Maynard, Lieutenant W. B. Muse.	1871
II.—Results of observations made at the United States Naval Observatory with the Transit Instrument and Mural Circle, in the years 1853 to 1860, inclusive.	Professor M. Yarnall	
III.—Catalogue of stars observed at the United States Naval Observatory during the years 1845 to 1871.	Professor M. Yarnall	
IV.—Memoir of the founding and progress of the United States Naval Observatory.	Professor J. E. Nourse	
I.—Tables of instrumental constants and corrections for the reduction of Transit observations.	Professor J. R. Eastman	1872
II.—Difference of longitude between Washington and Detroit, Mich.; Carlin, Nevada, and Austin, Nevada.		
Superintendency of Rear-Admiral Davis.		
I.—The Uranian and Neptunian systems investigated with the 26-inch Equatorial.	Professor S. Newcomb	1873
I.—The Instruments and the Publications of the United States Naval Observatory.	Professors M. Yarnall, J. R. Eastman, and E. S. Holden.	1874
II.—Report on the difference of longitude between Washington and Ogden, Utah.	Professor J. R. Eastman	
III.—Catalogue of Double Stars	S. W. Burnham	

IV.—PUBLICATIONS OF THE OBSERVATORY.

1. VOLUMES OF OBSERVATIONS.

Vol. I.	Astronomical Observations for the year		1845	published in	1864
II.	Do.	do.	1846	do.	1851
III.	Do.	do.	1847	do.	1853
IV.	Do.	do.	1848	do.	1856
V.	Do.	do.	1849–1850	do.	1859
VI.	Do.	do.	1851–1852	do.	1867
*VII.	Results of Astronomical Observations for the years		1853–1860	do.	1872
VIII.	Astronomical and Meteorological Observations for		1861	do.	1862
IX.	Do.	do.	1862	do.	1863
X.	Do.	do.	1863	do.	1865
XI.	Do.	do.	1864	do.	1866
XII.	Do.	do.	1865	do.	1867
XIII.	Do.	do.	1866	do.	1868
XIV.	Do.	do.	1867	do.	1870
XV.	Do.	do.	1868	do.	1871
XVI.	Do.	do.	1869	do.	1872
XVII.	Do.	do.	1870	do.	1873
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XIX.	Do.	do.	1872	do.	1874
XX.	Do.	do.	1873	do.	1875
XXI.	Do.	do.	1874 in press.		

2. SPECIAL OBSERVATIONS AND REPORTS.

Observation or report.	Author.	Appendix in volume for the year—
Superintendency of Commander Maury.		
A.—Observations on sunspots	Rev. B. Sestini, S. J.	
B.—Observations on the Mississippi River at Memphis	Passed Midshipman R. A. Marr	
C.—Tables for facilitating reduction of Lyman plates of fixed stars to their mean places.	Professors J. H. C. Coffin and J. S. Hubbard.	
(Zones of stars observed at the Naval Observatory in 1845, reduced by Assistant Astronomer James Ferguson in 1860.)	Lieutenant L. Maynard and Prof. J. S. Hubbard.	
Superintendency of Captain Gilliss.		
Longitude of United States Naval Observatory from Greenwich determinations.	Professor S. Newcomb	
A.—Solar parallax from observations on the planet Mars, made near the opposition, 1862, with the meridian circle.	Professor A. Hall	
A.—Solar parallax from observations on the planet Mars, made near the opposition, 1862, with the meridian instruments.	Assistant	
B.—Orbit of Nemausa	Pr	
Investigation of the latitude and longitude of the observatory, and of the declination of certain circumpolar stars.		

* This volume was published as Appendix V

Y.

ounted in 1844.
do 1844.
do 1845.
do 1845.
- do 1865.
- do 1873.

THE INSTRUMENTS

OF THE

OBSERVATORY.

I.—The Mural Circle - - - - -	Mounted in	1844.
II.—The Transit Instrument - - - -	do	1844.
III.—The Prime-Vertical Transit-Instrument -	do	1845.
IV.—The 9.6-inch Equatorial - - - -	do	1845.
V.—The Transit Circle - - - - -	do	1865.
VI.—The xxvi-inch Equatorial - - - -	do	1873.

PLATE I.



Heliotype. James R. Osgood & Co., Boston.

TRANSIT INSTRUMENT.

U. S. NAVAL OBSERVATORY, WASHINGTON.

MOUNTED 1845.

Object Glass { Focal Length, 7 ft. 0.4 in.

MURAL CIRCLE.

U. S. NAVAL OBSERVATORY, WASHINGTON.

MOUNTED 1845.

Object Glass { Focal Length, 5 ft. 3.8 in.

I.—[illegible]

[Prepared by [illegible] M. YORKE.]

The Mural Circle was constructed by [illegible] and received August 12, 1844, in the room which is [illegible] during the latter part of 1845 to the Observatory building, and there mounted on the eastern face of [illegible] 9 feet 4 inches high, 6 feet from north to south, and 3 [illegible].

The axis of the instrument reaches entirely across [illegible] of 12 inches span and 21 inches pitch.

The Circle is placed upon the eastern end of the axis [illegible] friction rollers, supported by counterpoises. It is [illegible] upon the periphery of the rim, cut upon a bronze [illegible] and by means of six of Troughton's leveling screws [illegible] the face of the pier and adjusted, as nearly as [illegible]. These points are designated by the letters A, B, C, D, E, F, on the east side of the pier and the Circle through the [illegible] as follows, to—

(Reading for) B = [illegible]
Do. C = [illegible]
Do. D = [illegible]
Do. E = [illegible]
Do. F = [illegible]

respectively.

These points are [illegible] screw of each may be [illegible] Levels are divided for [illegible] to [illegible] according to the [illegible] on the [illegible] and the [illegible] to the "Declination Clamp" [illegible] a line and the axis of the [illegible] six inches in front of the pier [illegible] accompanying [illegible] was adjusted [illegible].

PLATE I.



I.—THE MURAL CIRCLE.

[Prepared by Professor M. YARNALL, U. S. N., in charge.]

The Mural Circle was constructed by Troughton & Simms, of London. It was mounted August 12, 1844, in the room which is now used as the Library, but was removed during the latter part of 1845 to the Observing Room in the east wing of the building, and there mounted on the eastern face of a sandstone pier. This pier is 9 feet 4 inches high, 6 feet from north to south, and 3 feet 3 inches from east to west.

The axis of the instrument reaches entirely across the pier, through an archway of 32 inches span and 21 inches pitch.

The Circle is placed upon the eastern end of the axis, which is sustained in part on friction-rollers, supported by counterpoises. It is 5 feet in diameter. The divisions are upon the periphery of the rim, cut upon a band of gold, and 5′ apart. They are read off by means of six of "Troughton's Reading Microscopes," mounted firmly upon the face of the pier, and adjusted, as nearly as practicable, 60° from each other. These microscopes are designated by the letters A, B, C, D, E, F; A being on the north side of the pier, and the line through the center, joining A and B, being horizontal.

By this arrangement—

(The reading for)	B =	(the reading for)	A + 180°	
Do.	C =	do.	A + 300°	
Do.	D =	do.	A + 120°	
Do.	E =	do.	A + 240°	
Do.	F =	do.	A + 60°	

approximatively.

These microscopes are adjusted, as to focal length, so that five revolutions of the micrometer-screw of each may measure one space, or 5′ of the circle. The micrometer-heads are divided into sixty parts, reading, therefore, directly to *seconds*, or, by subdivisions easily made, to *tenths* of seconds. In general, in making readings of the Circle, the *seconds* and *parts* are read from each of the six microscopes, and to these are prefixed the *degrees* and *minutes* from A alone. The mean of these six readings constitutes the "Circle Reading."

For illuminating the graduated limb, an argand gas-burner is placed behind the pier, in a line with the axis of the instrument. The light from this burner passes through six holes, bored through the pier, directly to the reflectors attached to the several microscopes. In this way a less variable illumination is secured than by means of lamps carried in the hand.

The Circle is adjusted to a vertical position by means of a plummet suspended on a fine silver wire, with the aid of appendages attached to the telescope, known as "Ramsden's Ghosts," and to its position in the meridian by observations of the transits of circumpolar stars.

The telescope of this instrument has an object-glass of 4 inches clear aperture, with a focal length of 5 feet. It is attached to an independent axis, moving within the axis of the Circle, and may be moved to any position with reference to the graduations. The ends of the tube, or the cells supporting the object-glass and the micrometer, are firmly clamped to the rim of the Circle.

The eye-end of the telescope was originally furnished with a fixed diaphragm containing seven vertical wires, designated I, II, III, &c., nearly equidistant, and at an average interval apart of $15^s.4$ (of time), and one horizontal wire, which it is convenient to call the *fixed wire.* The adjustments of this diaphragm have consisted in placing it in the principal focus of the object-glass; turning it so that an equatorial star would exactly traverse the *fixed wire;* and, the Circle being adjusted to an exact vertical position and the telescope directed to the nadir, moving the diaphragm so that *vertical wire* IV would coincide with its image reflected from a surface of quicksilver seen by means of the collimating eye-piece. In connection with the fixed diaphragm was another, movable with a micrometer-screw, and furnished with one wire or spider-line only.

For the purpose of cataloguing, this diaphragm was furnished with eight additional wires parallel to the original one, and distributed on each side of it at distances equivalent to five revolutions of the micrometer-screw. Subsequently the four nearest to the middle or original one were removed, those which remained being, respectively, *five, fifteen, fifteen, five* revolutions apart.

In the record of the work in which they were employed they were numbered 1, 2, 3, 4, 5, in the order of the micrometer-scale, *i. e.*, commencing in the southern part of the field of view. To render available so large an extent of field in declination, as was embraced in this system of wires, the eye-piece was also provided with a vertical motion. The adjustment of this diaphragm consisted in making *wire* 3 parallel with the *fixed wire.* After the year 1849 the telescope micrometer was alone used; a slight change was made in the arrangement of the wires, *nine* vertical wires being substituted for *seven,* and two horizontal wires, either of which might be used, as convenient.

The *head* of the telescope micrometer is divided into one hundred parts, and is usually read to *thousandths* of a revolution.

A basin of mercury, sustained by slips of India rubber, is provided, and the circle-telescope is so pointed that, when the nadir-divisions of the former are accurately under the zeros of the microscopes, the images of the horizontal wires, in the field of the latter, may be seen at a small distance from the wires themselves. The micrometer-reading for the true nadir being that which corresponds to the coincidence of each wire seen directly with the image of the other seen by reflection, the images are alternately made to measure, on each side of the wires, spaces equal to their distance apart. The old method of getting the nadir was from coincidences of the fixed wire with its image, and a correction was applied for runs of the microscopes. A large proportion of the

declinations made in the Observatory were made with this instrument, and it has been in use from the year 1845 to the latter part of 1875. The optical power of the instrument is very good, and its work is very satisfactory.

The Declinations made with this instrument, and the Right Ascensions made with the Transit Instrument, have been published in a "Catalogue of stars observed from the years 1845 to 1871," and another edition of this catalogue is preparing, to embrace additionally the stars observed with these instruments from 1871 to the year of publication.

II.—THE TRANSIT INSTRUMENT.

[Prepared by Professor M. YARNALL, in charge.]

The Transit Instrument is a seven-foot (7-foot 0.4-inch) achromatic, with a clear aperture of 5.33 inches.

The Telescope itself is one of ERTEL & SONS' best make. After use for several years the object-glass was reground by ALVAN CLARK & SONS in the year 1862, and was considerably improved by them, so that it was quite possible to observe δ Ursæ Minoris throughout the twenty-four hours.

The instrument is now situated in the east wing of the Observatory, under a slit 20 inches wide, extending entirely across the roof and down the wall to within 4 feet 5 inches of the floor, on each side. The wing is of brick, painted on the inside sky-blue; the roof is covered with copper, and the trap-doors are lined with green baize.

The instrument is mounted on two granite piers, each a solid block, let down below the floor for a foot or two, and firmly imbedded into a stone foundation 8 or 10 feet deep and 10 feet 2 inches by 6 feet 4 inches, the whole completely isolated from the building. The granite piers are 30 inches by 21 inches at the floor, tapering up for 5 feet 3 inches to a moulding, and thence for 21 inches in a parallelopipedon 14 by 12 inches, making the top of each pier 7 feet from the floor.

Above the tops of these the bearing-points of the Ys are 3.5 inches, and the axis itself of the Telescope about 1 inch higher, making the distance from the axis to the floor 7 feet 4.5 inches, leaving ample room, when the Telescope is in the zenith, for the observer, on an observing-couch, C., (52 inches by 21 inches, and 26 inches high, moving on a railroad between the piers,) to wheel himself under and take a comfortable recumbent posture at the eye-piece. The distance between the piers at the floor is 31 inches; at the top it is somewhat greater.

Midway between the piers, and sunk in the floor, is a well 12 inches square and 18 inches deep, within which is placed a box 10 inches square, to which are attached four slips of India rubber, which sustain a basin of mercury about 16 inches from the floor of the room, the whole covered by a double covering, the last sitting in a mortise even with the floor. This basin of mercury is used with the collimating eye-piece to obtain the corrections for level and collimation, or the adjustment for stellar focus and the verticality of wires. The instrument is lighted through either pivot by a common observing-lamp. There are six eye-pieces, with powers extending from 85 to 162.

It was at first supposed that the pivots of the instrument were unequal in size and irregular in form, but by a redetermination in 1864 it was not discovered that

there was any want of symmetry, and the excess of pivots, previously used $-0^s.025$, was changed to $+0^s.008$. These determinations were obtained by the use of the spirit-level, an instrument not altogether reliable.

The large majority of observations for Right Ascension made in the Observatory have been made with this instrument, and it has always been considered to give satisfactory results. It was first mounted in 1845, and is yet in use. The method of observing up to 1849 was with the eye and ear, and since then the American or chronographic method has been used. The instrument was first mounted in the west transit-room, but in 1864 it was removed to the east room, where it now is.

In order to observe chronographically, instead of the seven wires previously used, twenty-five were introduced, and at this time there are twenty-one, arranged in five tallies. A single observation is of almost the same value whether made by eye and ear or with the chronograph; there is not a relative increase of accuracy in proportion to the number of wires, but the great advantage of the chronographic method consists in the fact that the eye only is required in observing, and the attention is only absorbed at the moment of observing on each separate wire.

III.—THE PRIME-VERTICAL TRANSIT INSTRUMENT.

This instrument being for the present out of use, no detailed description of it is required, further than that given in *Washington Astronomical Observations*, vol. i, 1845, page li *et seq.*, and Plate IV.

Its objective has an aperture of 4.86 inches, and a focal length of 6 feet 5 inches. Its four eye-pieces magnify—

No. 1 - - - - - -	74 diameters.
No. 2 - - - - - -	106 diameters.
No. 3 - - - - - -	140 diameters.
No. 4 - - - - - -	221 diameters.

The observations made with this instrument may be found in the annual volumes.

PLATE V.



Heliotype. James R. Osgood & Co., Boston.

THE 9.6 INCH EQUATORIAL.

U. S. NAVAL OBSERVATORY, WASHINGTON. MOUNTED 1844.

OBJECT GLASS { Focal Length, 14 ft. 4.5 in.
Clear Aperture, 9.62 in.

IV.—THE 9.6-INCH EQUATORIAL.

[Prepared by Professor J. R. EASTMAN, in charge, 1876.]

This instrument was made by Merz & Mahler, of Munich. Its object-glass has a clear aperture of 9.62 inches, and a focal length of 14 feet 4.5 inches. It is mounted in the German style, and is provided with a finder, hour and declination circles, a micrometer, with a position-circle, and a driving-clock.

The finder has an object-glass 2.6 inches in diameter, with a focal length of 32 inches.

The hour-circle is 15 inches in diameter, is divided to single minutes, and may be read by means of a vernier to 2^s.

The declination-circle is 21 inches in diameter, is divided to 5 minutes of arc, and may be read by means of a vernier to 4″.

The micrometer is provided with three *fixed* transit-wires, and a *movable* declination system consisting of five wires. The transit-wire nearest to the comb of the micrometer is called wire A, and the others are known as B and C. The equatorial interval of B—A is $12^s.03$, and of C—B is $11^s.98$.

The approximate intervals of the declination system in micrometer-revolutions are, numbering the wires from the head of the micrometer:

1 to 2 - - - -	16.86 revolutions.
2 to 3 - - - -	13.06 revolutions.
3 to 4 - - - -	13.10 revolutions.
4 to 5 - - - -	16.06 revolutions.

The value of one revolution of the micrometer-screw was found in 1872 to be 15″.31.

The position-circle is divided to 15′, and may be read by a vernier to 1′.

The illumination of the field or of the wires is accomplished by directing the light from a gas-burner through openings in the side of the tube and toward the eye-piece, in the usual manner.

The clock-work for moving the instrument in right ascension is regulated by a Fraunhofer centrifugal pendulum, but it is scarcely powerful enough to properly control the motion.

This instrument is provided with eight eye-pieces, magnifying, respecively, 90, 132, 209, 296, 433, 562, 734, and 899 diameters.. One eye-piece is fitted with a single-ring micrometer and one with a double-ring.

There is a chronograph mounted on a shelf on the southwest side of the observing-room, and protected by doors which completely inclose it when not in use. It was made by Bond, of Boston, and is regulated by "Bond's spring governor." The barrel is 6 inches in diameter, 13.5 inches long, revolves once in a minute, and the record of both clock and key is effected by a single, glass, fountain-pen. This chronograph can be connected with any clock which it is desirable to use.

THE COMET SEEKER.

This instrument is placed on a stand in the equatorial-room when not in use. It was made by Utzschneider & Frauenhofer, is equatorially mounted, and has an object-glass of 3.96 inches diameter and 32.4 inches focal length. It has an hour-circle 5 inches in diameter, divided on silver, and reading by two verniers to 4ˢ, and a similar circle on the declination-axis which reads by verniers to 1′. The instrument has five eye-pieces, whose approximate magnifying powers are, respectively, 13.6, 19.4, 40.6, 40.8, and 41.6 diameters. No. 5 is furnished with a ring micrometer. When this instrument is to be used it is placed on supports outside the dome on the roof.

THE 9.6-INCH EQUATORIAL OBSERVING-ROOM

The Equatorial is supported on a pier whose foundation is 9 feet below the surface of the ground. The diameter of the foundation is 15 feet. It is built up solid of stone laid in hydraulic cement to a height of 10.5 feet, where the diameter is 12 feet. On that foundation a conical pier 28 feet high and 7 feet in diameter at the top is built. The walls are 3 feet thick to within 10 feet of the top, where they gradually increase in thickness, and the last 3 feet is solid. The pier is capped with stone, on which rests the block of Maryland granite which supports the instrument. The room is circular and 20.1 feet in diameter, with walls 7 feet high. The hemispherical dome revolves on six equidistant, iron, 32-pound balls, moving in the groove of a cast-iron rail fastened on the top of the circular wall. The frame-work of the dome is of wood, covered with half-inch boards sheathed with copper. It is lined inside with painted canvass. The observing-slit is 20 inches wide, extends from 2 feet above the base of the dome to 2 feet beyond the center. The slit is covered by five shutters, each opening from the inside by means of a lever and pulley, the one at the top of the dome opening first. The dome is turned by means of a rack and pinion, operated by a vertical wheel 3 feet in diameter and fitted with projecting handles.

The room is furnished with an observing-chair of an obsolete pattern, which may be moved around the pier on a circular track.

PLATE III.



Heliotype. James R. Osgood & Co., Boston.

TRANSIT CIRCLE.

U. S. Naval Observatory, Washington. Mounted 1866.

Object Glass { Focal Length, 12 ft. 1.0 in.

V.—THE TRANSIT CIRCLE.

[Prepared by Professor J. R. EASTMAN, in charge, 1876.]

This instrument was made by Pistor & Martins, of Berlin, in 1865. It is of the reversible pattern, and is mounted upon two massive marble piers, with its axis 8 feet 2 inches above the floor.

The telescope has a clear aperture of 8.52 inches and a focal length of 12 feet and 0.7 inches. The axis is cast in a single piece, into which the steel pivots, 2.09 inches in diameter and 1.70 inches long, are screwed.

The Ys are of gun-metal, and the bearing-surfaces are 0.28 of an inch wide. The distance between them, measured from center to center of the bearing-surfaces, is 3 feet 9.1 inches. The telescope-tube is made in two similar parts, which are bolted to the opposite sides of the cube which forms the central portion of the axis. This cube measures 16.64 inches on each edge.

Attached to the two extremities of the axis are two circles identical in form and size. Each has ten radial arms, is cast in a single piece weighing about eighty pounds, is 45.30 inches in diameter at its outside edge and 43.40 inches at the graduation. The circle on the clamp-end of the axis, designated as circle A, has inlaid upon its face two bands of silver, each 0.13 of an inch wide, the inner one of which is graduated to every 2′ and the outer one to every 10′. The other, designated as circle B, has inlaid upon its face a single band of silver 0.13 of an inch wide, which is graduated to every 2′.

The graduation on each of these circles is numbered from 0° to 360°, the reading increasing from left to right, and, as they face in opposite directions, when the telescope is moved in zenith-distance the reading of one circle increases while that of the other diminishes.

The circles are attached to the axis in such a manner that they may be set to give any desired reading when the telescope is pointed to the zenith.

Each pier carries four microscopes, placed at the extremities of two diameters, which intersect each other at right angles, and each of which makes an angle of 45° with the vertical. They are attached by means of metal arms, covered with wood, to the brass disk on the face of the pier which supports the Ys.

The microscopes on the western pier are marked, I, II, III, IV, and those on the eastern pier, V, VI, VII, VIII. The readings of the former diminish, and those of the latter increase, as the telescope moves from the zenith toward the south. These microscopes magnify about forty-five diameters. Each revolution of their screws is equal to 30″, and their micrometer-heads are divided to 0″.5. Each microscope micrometer is furnished with two parallel threads about 12″ apart, and the reading is made when

the image of the division on the limb of the circle is exactly midway between the threads. In addition to the microscopes already mentioned each pier carries another, which is employed as a pointer for setting the telescope by means of the course-graduation on circle A.

These microscopes magnify twenty-three diameters, and are placed at the extremities of horizontal radii to the circles, that on the western pier being to the north and that on the eastern pier being to the south of the axis. The setting-microscope in actual use is always the one at the clamp-end of the axis.

In the eye-piece of the telescope is a fixed reticule of fifteen vertical and two horizontal wires. The latter have a space of about 8″ between them, and are used principally to mark the center of the field of view. The notation and the approximate equatorial intervals between each vertical wire, and the mean of sets B and D, a C $_2$ C_3, and C_4 are as follows:

	s.		s.		s.
I	36.8	C_1	4.1	D_1	8.2
II	24.5	C_2	2.0	D_2	9.7
III = B_1	12.2	IV = C_3	0.0	V = D_3	12.2
B_2	9.7	C_4	2.0	VI	24.5
B_3	8.2	C_5	4.1	VII	36.8

The wires B_1 to B_3 are known as set B; C_1 to C_5, set C; and D_1 to D_3, set D. The wire on the western side of the field is always designated as wire I; consequently, when the instrument is reversed the notation of the wires is reversed.

In addition to the fixed reticule the eye-piece contains a right-ascension and a zenith-distance micrometer, in each of which the readings increase as the wire moves from the micrometer-head. The right-ascension micrometer is used in determining the collimation constant, and sometimes in obtaining the time of transit of close circumpolar stars when clouds prevent their being seen at the fixed wires. It is provided with a single vertical wire moved by a micrometer-screw, each revolution of which measures 1ˢ.024. The zenith-distance micrometer carries four horizontal wires, the middle two of which are about 3″ apart, and the center of the space between them is regarded as the standard middle wire. One revolution of the zenith-distance micrometer = 15″.312. The other two are placed at a distance of about ten revolutions of the screw on either side of the middle wires, that nearest the head of the micrometer being called wire A and the other wire B. In observing southern stars the micrometer-head is below the eye-piece if the clamp is west, and above it when the clamp is east. An increase of micrometer reading is subtractive from the reading of circle A and additive to that of circle B.

The illumination of the field of view is so arranged that the wires can be shown either dark on a bright field or bright on a dark field. In the case of bright field-illumination the color of the light can be varied from deep red, through light red, yellow, and light blue, to dark blue.

The instrument is provided with five positive eye-pieces, magnifying, respectively, 135, 158, 186, 279, and 395 diameters. That magnifying 186 diameters is generally used.

COLLIMATORS.

The Transit Circle is furnished with two collimators, having object-glasses of 35.2 inches focal length and 2.13 inches clear aperture. The eye-pieces have a power of 67. The collimators are mounted on sandstone piers, the one north and the other south of the Transit Circle, 14.8 feet from the center of the instrument. The field of view of collimator A contains a single vertical wire, crossed at its middle point by a horizontal wire. The field of view of collimator B contains a fixed wire and two intersecting wires, movable by means of a micrometer-screw. Each of these wires makes an angle of 12° with the vertical. Collimator A is usually mounted on the south pier. Two levels are provided by which the collimators may be placed horizontal.

Each side of the central cube of the Transit Circle telescope is pierced with a circular opening 2.3 inches in diameter, which is closed by screwing a cap into it. By removing the caps and setting the telescope vertical the wires of either collimator may be seen from the other.

THE STANDARD SIDEREAL CLOCK.

This clock is Kessels, No. 1324. In order to provide as far as possible against changes of temperature, the clock is inclosed in a vault of heavy masonry lined with tin, situated in the room which adjoins the observing-room on the eastern side, and to prevent the works of the clock from rusting the dryness of the air is maintained by keeping a fire in the clock-room throughout the year. The clock has a gridiron pendulum, and is connected with the galvanic system of the Observatory by means of a platinum point which projects from about the middle of the pendulum-rod, and at each vibration touches the surface of a small globule of mercury and closes the circuit. It is connected with the chronograph in the usual way. The rate of the clock is controlled by means of small weights which can be placed in a small cup on the pendulum-rod.

THE COUNTING-CLOCK.

This clock is attached to a brick pier near the eastern wall in the observing-room. It was made by Parkinson & Frodsham, of London, and has a mercurial pendulum. Its rate is controlled by means of small weights placed on the top of the jar containing the mercury, and it is kept within less than half a second of the Kessels clock.

This clock contains a delicate spring, furnished with a platinum point, resting upon a small plate of the same metal; the whole so arranged that at the beginning of each minute an arm attached to the arbor of the seconds-hand raises the spring and separates the point from the plate for one second. Wires are attached to this apparatus so that when desired it may be included in the same circuit with the Kessels clock, when, if the beats of the two clocks are nearly in coincidence, the mark for the sixtieth second of the Kessels clock is omitted on the chronograph.

THE STANDARD MEAN-TIME CLOCK.

This clock is attached to a stone pier in the chronometer-room, but the officer having charge of the Transit Circle is responsible for furnishing its errors and rates. It was made by Parkinson & Frodsham, of London, has a mercurial pendulum, and its rate is controlled by means of small weights placed on the jar containing the mercury.

It is usually compared with the standard sidereal clock by causing their beats to be recorded on the same chronograph, generally, until a coincidence is obtained, every day that a sufficient number of observations are obtained with the Transit Circle to determine the error of the sidereal clock. The accuracy of this clock is far superior to that of any other clock in the Observatory.

THE CHRONOGRAPH.

This apparatus is mounted on a small stand near the eastern wall of the observing-room. This instrument is a modified form of the Hipp chronograph, in which regularity of motion in the train is secured by a spring making 132 vibrations per second. The barrel of the chronograph is 6.37 inches in diameter, 13.5 inches long, and revolves once in a minute. A sheet of paper fastened on the chronograph-barrel by thin metallic springs is sufficient to contain the record of two hours' continuous work, and the train only requires winding when the paper is changed. The clock-signals and those of the observer are recorded by a single pen. The armature of the magnet which controls the pen is provided with repeating-points, for use in sending signals to distant stations when determining telegraphic differences of longitude.

The pen-carriage is moved forward by an endless screw, but may be lifted from its bearings and moved backward or forward so that the pen can be placed upon any desired part of the paper. The chronograph stops when the sheet is full. The record is made on paper of the quality of ordinary writing-paper, with an ink which does not freeze at 0° F. The ink is made in the following proportions:

Water - - - - - -	4 fluid ounces.
Alcohol - - - - -	2 fluid ounces.
Concentrated Glycerine - - -	1 fluid drachm.
Crystallized Aniline Blue - -	40 grains.

The ink should be thoroughly filtered before using.

The pen is of glass, and the lower part of the bulb is drawn out to a fine capillary tube, so that, when the bulb is filled with ink and the pen allowed to rest its whole weight on the paper, it produces a fine, sharp line as the barrel revolves.

THE BAROMETER AND THERMOMETER.

The Barometer is of the cistern form, and is suspended on the eastern wall of the observing-room, near its northeastern corner. This instrument reads by a vernier to the one-hundredth of an inch.

The Thermometer has a Fahrenheit scale, and is graduated from — 36° to + 157°. It is suspended 1 foot outside the north front of the observing-room, 13.5 feet above the grass, and is protected from radiation by a shield formed of a double roof of boards, the outside one covered with tin painted white, and three sides of wooden, double louver-work.

THE OBSERVING-ROOM.

The interior of the observing-room, which has been occupied since February 2, 1870, measures 40 feet from north to south, and 28 feet 3 inches from east to west. Its height, from the floor to the under side of the shutters which cover the opening in the roof, is 23 feet 2 inches at the ridge, and 19 feet 6 inches at the eaves. The ridge of the roof extends east and west. The opening in the roof has a width of 3 feet 8 inches, and extends downward, in the north and south walls, to within 7 feet 4 inches of the floor. The portion in the roof is closed by means of four sliding shutters, while the portions in the north and south walls are each closed by double doors.

The construction of the room is peculiar, the walls of the frame being covered with tin, and shaded from the direct rays of the sun on the east, south, and west sides by light wooden louver-work. This construction was adopted in order to secure identity of temperature between the internal and external air. The latitude of the Transit Circle is the same as that of the center of the central dome, but it is 77.8 feet = 0ˢ.066 west of that point.

VI.—THE XXVI-INCH EQUATORIAL.

[Prepared by Professor EDWARD S. HOLDEN, U. S. N.]

Section 18 of the "Naval Appropriation Bill," approved July 15, 1870, contained the following provision:

"That the Superintendent of the Naval Observatory be, and he is hereby, authorized to contract for the construction of a refracting telescope of the largest size, of American manufacture, at a cost not exceeding fifty thousand dollars."

Immediately upon the passage of this bill negotiations were entered into with the firm of ALVAN CLARK & SONS, of Cambridge, Massachusetts, resulting in the conclusion of a contract for the construction of the instrument, in the following terms:

"This indenture, made and concluded upon this thirteenth day of August, in the year one thousand eight hundred and seventy, between ALVAN CLARK, GEORGE B. CLARK, and ALVAN G. CLARK, all of Cambridge, Massachusetts, and doing business under the name and firm of ALVAN CLARK & SONS, as the party of the first part, and the UNITED STATES OF AMERICA, represented by Commodore B. F. SANDS, U. S. N., Superintendent of the Naval Observatory, by authority of the eighteenth section of the act making appropriations for the naval service for the year ending June 30, 1871, approved July 15, 1870, as the party of the second part, witnesseth:

"That, for the considerations hereinafter mentioned, the said party of the first part agrees to construct, finish, and mount in the United States Naval Observatory, Washington, free of all expense to the party of the second part, a refracting telescope of good definition, and of twenty-six inches clear aperture, mounted equatorially on the German plan, with all the usual and necessary counterpoises and other devices to secure its easy motion, its proper balance in all positions, and the safety of its object-glass; with divided circles, to be each read by two microscopes; the R. A. circle to seconds of time, and the Declination circle to tenths of a minute of arc; with a driving-clock sufficiently regular and powerful to secure an equable and steady motion in right ascension, for a period of at least three hours without stopping; with the usual number and description of eye-pieces and ring-micrometers; with a filar micrometer for measuring distance and angle of position; an AIRY'S double-image micrometer, and a divided glass or mica-scale micrometer. The said telescope shall also be furnished with such spectroscope, such devices to secure successful and easy manipulation, and such apparatus for illuminating the wires, the field, and the circle-divisions, as the party of the second part may prescribe, it being agreed, however, that no spectroscope shall be required by him of which the total necessary expense of construction shall exceed one thousand dollars, and that no new devices or apparatus thus prescribed shall be of an unusually expensive character.

"It is also agreed that the party of the second part shall build at his own expense a proper foundation of the instrument, to include all that part of the support which is commonly built of stone, and to be terminated on top by a horizontal surface, and that the contracting party shall furnish and put in complete working order everything which is to be borne by the said surface, and shall do everything necessary to secure the successful working and performance of the instrument, whether otherwise expressed in this contract or not.

"It is also agreed that the said instrument shall be completed and mounted within four years of the time of receiving the first payment.

"It is also agreed that all the designs of the instrument shall be submitted to the Superintendent of the Naval Observatory and be approved by him before being carried into execution, but such approval shall not be construed to diminish the responsibility of the contractors.

"In consideration of the foregoing, the party of the second part agrees to pay the party of the first part the sum of forty-six thousand (46,000) dollars in lawful money of the United States, in time and manner as follows, that is to say, a payment of ten thousand dollars when the glass shall have been tested and found of proper quality; an additional payment of five thousand dollars when the labor of figuring the glass shall be half performed; a payment of seven thousand five hundred dollars when the said labor shall have been completed and the glass proved in its cell; a payment of five thousand dollars when the instrument shall be ready for mounting; and the remainder of the price when the party of the first part shall have fully completed their contract. But it is agreed that if the party of the second part shall dispense with the spectroscope, a deduction of one thousand dollars shall be made from the above-mentioned price, and, furthermore, that if the United States shall remit the import-duty on the raw material, or any part of it, a deduction shall be made from the price equal to the currency-value of the duties thus remitted. The party of the second part also reserves the right, before making any payment, to require the contracting party to enter into a bond, with approved security, conditioned on the faithful performance of the contract, and to insure the work against injury by fire at their own expense."

The glass disks were immediately ordered by the contractors from Messrs. CHANCE BROTHERS & Co., of Birmingham, England, but such was the difficulty of casting disks of the required size that they did not arrive in this country until the end of December, 1871. The work of figuring them was immediately commenced and was completed in the autumn following. The mounting of the telescope was finished in the summer of 1873, and the whole was brought to Washington in October of that year. The work of mounting was completed during the month following, and on November 20 regular observations were commenced. The construction of the telescope and the building of the dome was under the immediate direction of Professor NEWCOMB. It is worthy of remark that the instrument was completed in less than half the time stipulated in the contract.

THE DOME.

The erection of the instrument upon the Observatory building would have required the removal of the old 10-inch equatorial, the remodeling of the interior of the building, and the erection upon it of a dome out of all proportion to the structure. It was therefore decided to extend the south wing of the Observatory, and to place the floor of the great dome upon the same level with the main floor of the rest of the building. The disadvantages of this course were believed to be far more than counterbalanced by its advantages. The only disadvantage to be taken into consideration is, that the telescope cannot sweep the horizon. In the north, the old dome rises to an altitude of about 16°, while in other directions the surrounding trees interfere with the view to an average height of perhaps 10°. This drawback is however entirely unimportant, for the reason that with so large an instrument astronomical observations can never be advantageously made so near the horizon. During the two years' use of the instrument no case has yet arisen in which the view of any object which it was desired to observe has been cut off by these obstructions. The advantages of the arrangement are cheapness and simplicity of construction, convenience of access from the adjoining computing-room, and partial protection from the wind.

The *foundation* of the dome is rubble-stone, 43 feet exterior diameter, and 2 feet

thickness of wall. It extends 17 feet below the main floor, and on the average, about 12 feet below the surface of the ground. This stone foundation extends only to the bottom of the joists which support the floor. On it rests a circular sill of oak timber in 8-foot sections, which is fastened down by iron anchors, each extending 3 feet into the stone-work. On this sill rest vertical posts of oak timber, alternately 6 inches by 6 inches and 3 inches by 6 inches, which form the frame-work of the cylindrical portion of the dome. The interior diameter of this portion is 41 feet, and its height 14 feet. These joists are strengthened by six diagonal braces between each pair of posts, the alternate sets inclining in opposite directions. On top of the posts rests a circular plate of oak timber, 8 inches broad by 4 inches high. On this plate rests a plate of iron, cast in pieces about 6 feet long, with flanges 5 inches wide on the edges, which flanges fit snugly on the two vertical sides of the oak plate, so that the latter is inclosed by iron surfaces on three sides. The inner and outer edges of the iron plates are elevated so as to form a sort of railway, with convex surfaces, the rails being 6 inches to 7 inches apart from centers.

On these rails rest the rollers, sixteen in number, on which the dome turns. These are conical in form, the outer end being enlarged in the proportion of the distance it has to move, and each is supplied with a pair of flanges to prevent end motion. These rollers are connected by a linked coupling, like that employed by Mr. GRUBB in the dome of the Dublin observatory, which, at the same time, keeps the rollers at the proper distance apart, and maintains their axes in a line passing through the center of the dome. The principal deviation from Mr. GRUBB'S system is, that his three narrow rollers are combined into a single wide one.

On the rollers rests another circular iron plate similar to the one upon which they rest, except that only the central part, about 3 inches broad, rests on the rollers, and that on the inside a horizontal flange, about 3 inches wide, is cast. Sixteen friction-rollers are supported at various points about the drum of the dome, which consist essentially of horizontal wheels, whose vertical rims are close to the vertical flanges of this circular plate, and which project slightly over its horizontal flange just described. Between the vertical flanges is set the 8-inch by 4-inch wooden sill on which the dome is built.

The dome is of the hemispherical pattern, the lower 3 feet, however, being as usual, cylindrical. The opening is 6.5 feet in width, and extends nearly 6 feet beyond the zenith. The sides are formed by two strong arches, into which all the smaller ribs are nailed. To prevent lateral springing of these arches, and to give solidity to the junction of the arches with the ribs, a 12-inch by 1-inch pine board is sprung on the frame-work under each arch, through the whole course of the latter, its outer edge being flush with the inner vertical surface of the arch. As the surface of this board is necessarily cylindrical, instead of spherical, the under edges of the ribs are notched away sufficiently to allow the board to fit into them, and the board is then nailed to each of them. That there has been no such lateral springing has been shown by careful measures of the width of the slit at various times. These arches have, necessarily, a powerful end thrust, tending to force the lowest circle of the moving portion of the dome into an elliptical form. This has been provided against by shrinking two

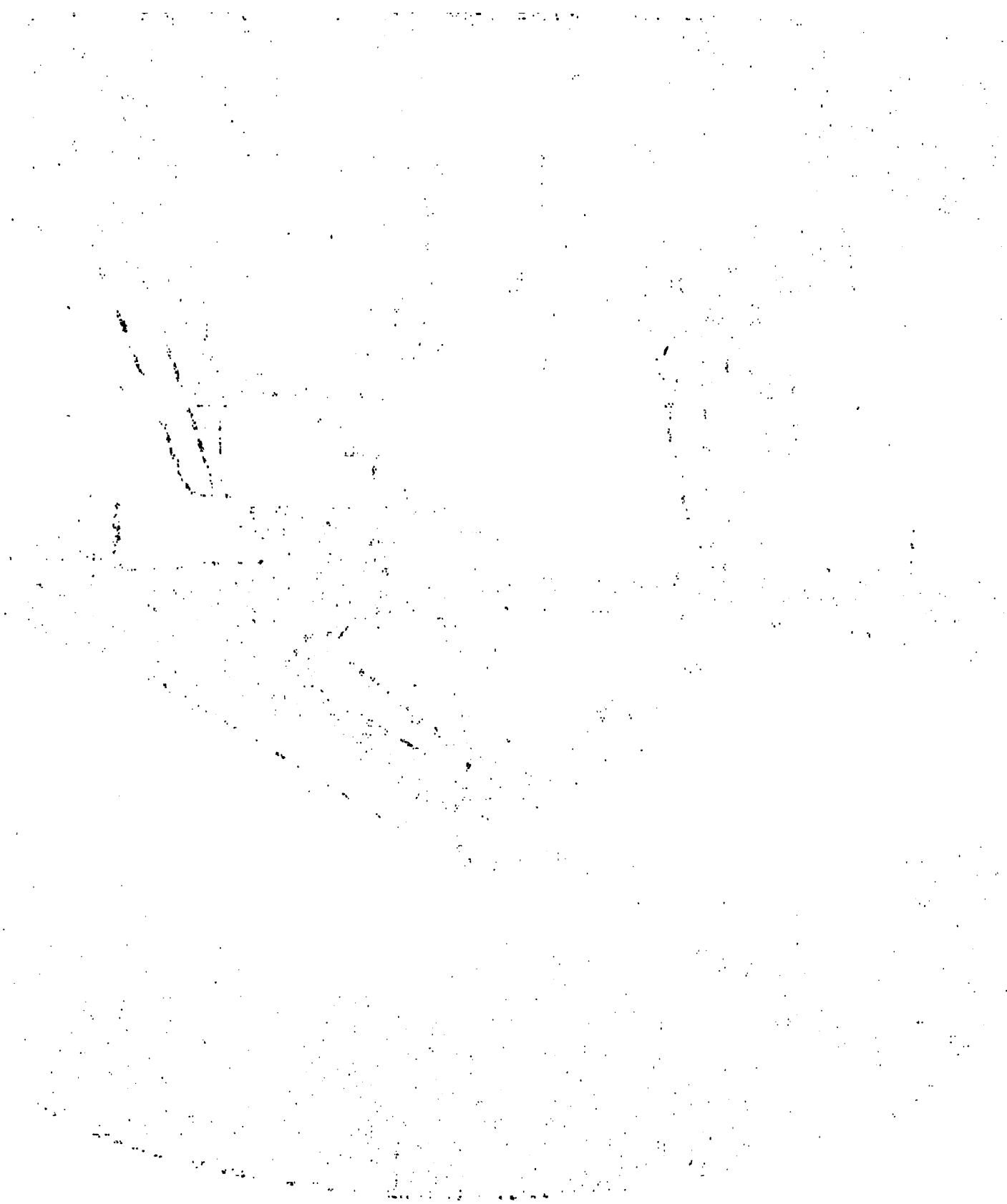


Heliotype. James R. Osgood & Co., Boston.

THE XXVI–INCH EQUATORIAL.

U. S. Naval Observatory, Washington. Mounted 1873.

Object Glass { Focal Length, 32 ft. 5.8 in.
Clear Aperture, 26 in.



bands of wrought iron, about 15 feet long, on the outside of the dome, so as to prevent such change of shape.

The frame-work of the dome is covered on the outside by sheets of galvanized iron and on the inside by canvas. The canvas on the inside of the cylindrical portion has been thoroughly soaked with several coats of *soluble glass.* Experiment has shown that it will not blaze when fire is applied to it, but only slowly smolder in such a way that some time would be required before the wooden frame-work could be ignited even if the canvas were to be accidentally set on fire. To provide against possible accidents of this kind, a hose is kept attached to a water-pipe supplied from the main reservoirs of the city, through which a powerful stream of water can be at once directed to any portion of the interior of the dome or of its adjacent office and bed-room. This hose is kept in working order in one of the closets opening directly into the dome.

Closets :—Three closets are provided, in one of which the Chronograph is placed, the other two serving as receptacles for the smaller apparatus, tools, etc.

The Chronograph-closet has within it the register of a hot-air furnace, which is opened whenever it becomes desirable (in the day-time, and not during observations) to prevent the *sweating* of the pier and instrument, which occasionally takes place by the deposition of dew from moist warm air upon the cold surfaces of the telescope, etc., which have not yet reached the temperature of the surrounding air.

The temperatures inside and outside of the dome are usually very nearly the same, owing to its peculiar construction; generally within 5° of Fahrenheit's scale. Ample provision has been made for securing this essential to the good performance of a large telescope, in the two windows and in the two wide doors of the dome, which are usually opened shortly after sunset on clear days.

The dome is lighted by eight gas-burners arranged at nearly equal distances around the drum or cylindric portion, about 6 feet above the floor. There is also a gas-pipe led around the pier, about 2 feet from the floor, in which are six stop-cocks, to which flexible-rubber tubes can be fitted, one on the north and south ends and two on the west and east sides. (See Plate IV.) From this pipe a branch goes up the north end of the pier and of the "harp-shaped piece" of the mounting, terminating in two burners near the north end of the polar axis. The photograph (Plate IV) shows the arrangement of these burners.[1]

The dome is moved by means of a pinion of cast iron, 10 inches in diameter, which works into a rack, also of iron, cast in sections of about 4 feet in length, screwed firmly to the inner surface of the dome. This pinion is on the same horizontal axle as a cast-iron wheel, 3 feet in diameter, in whose grooved edge an endless manila rope, 1 inch in diameter, is laid. The rack, rollers, and friction-rollers are shown in Plate IV. This simple device has proved satisfactory, after two years' service. A pull of about fifty pounds is sufficient to start the dome to move, and less than this will preserve the motion.

SHUTTERS.

After trial and experiments upon various systems of shutters for closing the observing-slit, which is 6.5 feet wide and 39.5 feet long, the following very simple device

[1] It is to be noted that Plates IV and V are *reversed* north and south. Plate VI, however, is not inverted.

was chosen, which after a year's trial has shown itself to be satisfactory and convenient. A piece of canvas, 43 feet long and 9 feet 4 inches wide, is used for the covering; to make it water-tight it is treated with two or three coats of linseed-oil. One end of the canvas is lashed through eyelets to ring-bolts at the lower extremity of the slit, and the other end is fastened to a cross-bar of 1-inch round iron, which has a grooved wheel, 4 inches in diameter, at each end. These grooved wheels rest upon brass railway-tracks, laid on the outside of each of the main arches which limit the slit, and travel up and down upon these tracks as the cross-bar is raised or lowered. In the longer sides of the canvas, galvanized-iron rings are inserted every 3 or 4 feet, and these rings embrace two arches composed of stiff galvanized-iron pipes, 2 inches in diameter, which are bent to a circle of a radius 3 or 4 inches greater than the outside radius of the sphere of the dome. The ends of these pipes are secured by passing them through oak blocks bolted firmly to the outside of the dome. To the iron cross-bar, at the upper end of the canvas, two wire ropes are attached, each of which runs from its end of the cross-bar through a series of nicely-fitted brass guide-blocks or *fair-leaders*, eight in number, fastened to the faces of the main arches, up to the outside of the dome and to a cast-iron wheel, 1 foot in diameter; returning, the rope passes round this wheel and through a second series of guide-blocks, immediately below the first, and round a second iron wheel, of the same size as that at the top of the slit, at the end of a horizontal axle placed at the bottom of the slit and inside of the dome, and from thence back to the other side of the cross-bar to the point where it is first fastened. It is thus, practically, an endless rope.

Motion can be given to the horizontal axle, at the bottom of the slit, by a simple mechanical arrangement. This motion is at once communicated to the iron bar at the upper end of the canvas through the wire ropes, and the slit is opened or closed with ease. The office of the 2-inch galvanized-iron arches on the outside of the dome is to confine the sides of the canvas by means of the rings which slip upon them, so as to prevent flapping of the canvas in case of high winds, and to keep its edge so close to the dome that rain may not beat in under it. The railway-tracks direct the motion and lessen friction. Simple mechanical arrangements are provided for lengthening or shortening the wire ropes, and for causing the direction of the pull of these ropes to be exerted upon the iron cross-bar in the most advantageous way. This shutter can be opened or closed in two minutes by one man, and it is perfectly water-tight, the canvas requiring renewal about once a year. In a more northern latitude snow might seriously interfere with its efficiency. During the winter of 1874–'75 at Washington, however, no trouble was experienced from this cause.

OBSERVING-CHAIRS.

The large observing-chair and step-ladder, shown in Plate IV, is of the simplest and lightest construction, and may be understood by an examination of the photograph. It is not placed upon a track, as it serves as a step-ladder as well as a chair, and moves upon the solid floor of the dome on ordinary casters. The chair itself is over-counterpoised, and will move upward by the application of a slight force and downward when the observer is seated in it. To adjust it to any position of the telescope, it is moved

slightly above the proper place, the observer enters it, and as it moves slowly downward he fixes it in position by the motion of a lever which interposes a stop in a toothed rack. The lower portion of the frame-work carries a closet in which are placed a Ruhmkorff coil and a battery.

This chair is not available for observations near the zenith. For these an ordinary "invalid-chair" is provided, which serves for all observations from the zenith southward to 75° of north polar distance, at which point the larger chair becomes available.

THE PIER.

At its foundation the pier which supports the telescope is divided into four parts, each 5 feet by 3 feet, the longer sides being north and south. These are set so as to leave an opening 14 feet long from north to south and 3 feet 10 inches wide from east to west. The opening in the shorter direction is arched over at a height of 8 feet above the floor of the cellar, and the longer opening, running north and south, at a height of 12 feet. The latter arch is built of brick, as is also the pier above it. At the level of the floor of the dome the brick pier is nearly 11 feet long from north to south, and 4 feet from east to west. It tapers slightly on each side to the top. It is surmounted by a stone cap 2 feet by 2 feet by 8 feet, on which rests the cast-iron support ("harp-shaped piece") of the telescope. Above the floor of the dome and within the brick pier is a closet, whose floor is covered by an iron base (for the support of the driving-clock) about 3 feet square, the inside height of the closet being about 5.5 feet. This closet (shown in Plate IV) is closed by two doors on its east and west sides, and the driving-clock is thus thoroughly protected from dust, etc. The cap-stone is secured to the brick pier by four solid iron rods which pass completely through the base of the harp-shaped piece and through the cap-stone, and are secured by nuts inside the brick pier and above the base of the casting. In Plate IV the position of the southeast rod may be traced from the nut at the top of the base of the casting downward to the hole in the brick pier, in which the under nut is secured. This hole is printed quite dark in the photograph. These four rods make the brick pier, the cap-stone, and the harp-shaped piece one connected system.

THE MOUNTING.

The harp-shaped piece, while it is strongly connected with the cap-stone and pier, is yet capable of three motions: one in azimuth; one a rocking motion in zenith-distance, about a north and south line; and one a rocking motion in zenith-distance, about an east and west line. Before the harp-shaped piece was mounted, two pieces of cast iron were firmly bolted to the top of the cap-stone 5 feet 5 inches apart. These serve simply for four horizontal screws to abut against, by whose motion the whole instrument is slewed in azimuth. Plate IV shows two of these screws, the head of the southeast screw being just below the handle of the crank for rapid motion in right-ascension, and the head of the northeast screw being vertically under the upper bearing of the polar axis. Immediately above these screw-heads are the heads of two vertical

screws which, with two other similar screws on the west side of the pier, serve to give to the mounting the two motions in zenith-distance just described. It has been found that the stability of this mounting leaves little to be desired.

THE AXES AND CIRCLES.

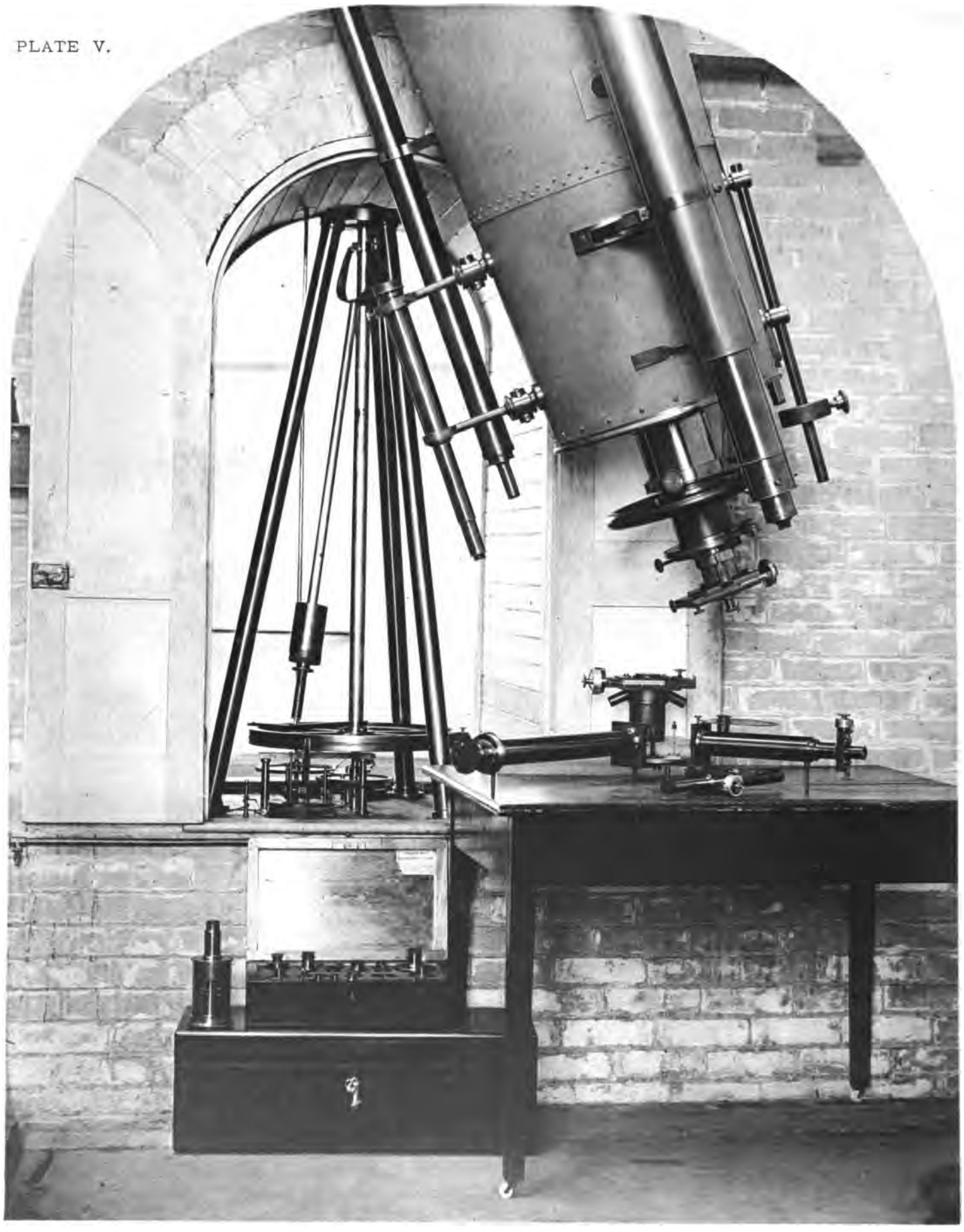
The polar axis is 7 inches in diameter at its thickest part, tapering slightly toward its lower end. The north end of this axis is 19 feet above the floor of the dome. The declination-axis is of the same size, and is pierced through its length by a cylindrical opening, about 2 inches in diameter. A steel flexure-bar passes through this opening, one end of it being firmly fastened to a frame-work inside the tube of the telescope, as near to the cone of rays as it was judged safe to place it This bar attains its greatest diameter about a foot outside the telescope-tube, where it accurately fills the bore of the declination-axis. It then tapers gradually toward the outer end, the amount of the taper being so calculated that the weight which the bar carries at this end shall be somewhat less than is necessary to make the rod touch the side of the bore.

Friction-Rollers and Counterpoises:—The north end of the polar axis rolls in a brass box and is supported by two friction-rollers of steel, about 7 inches in diameter. The weight of the axis is taken from the box by means of a strong steel spring, several feet in length, which is shown in Plate IV, just under the polar axis and to the south of the harp-shaped piece. The lower end of this is perforated, and traversed by a bolt, whose north end is fixed to the casting and whose south end has a screw-thread cut upon it. A nut on the screw-thread confines this spring in any required position. For the declination-axis there are no friction-rollers. The counterpoises, composed of four heavy iron cylinders, are so disposed that the center of gravity may fall within the upper box of the polar axis.

The Circles.—The *hour-circle* is divided on its southern *face* to one minute of time, and is read by two microscopes marked E. and W. (east and west) to one second of time. These microscopes are reached by means of wooden steps, permanently attached to the south end of the pier. There is also a coarse division on the *edge* of the circle in black and white paint, which can be read from the floor by the unassisted eye to one minute of time, and by means of this latter division the telescope can be set for any object which can be recognized in the finder. The *declination-circle* is close to the telescope-tube, and can be read by two opposite verniers to 0.2 of one minute of arc. These verniers are read from the eye-end of the telescope through two long microscopes, (marked A and B,) into which the images of the divisions of the circle and of the vernier are reflected by means of two right-angled prisms of glass fixed to the tube. The declination-circle is also divided coarsely on its *edge* to one degree of polar distance, and can be set by means of an opera-glass to one-half of one degree. For many purposes these coarse divisions of the two circles are the only ones which are needed.

Plate IV shows the east microscope of the hour-circle and both microscopes of the declination-circle, as well as one prism and the index for the coarse divisions. Both the fine and coarse divisions of each circle can be read in the day-time with ease. At

PLATE V.



Heliotype.

James R. Osgood & Co., Boston.

DETAILS OF CLOCK-WORK, ETC., OF XXVI-INCH EQUATORIAL.

night the coarse divisions of both circles can be made visible by lighting one or two of the gas-burners of the dome. To read the fine divisions of the hour-circle oil hand-lamps must be placed on stands fitted for this purpose. For illuminating the fine divisions of the declination-circle it was originally intended to use Geissler tubes, driven by a Ruhmkorff coil, and this method was given a thorough trial. It was found that while enough light could be thrown on the circle, the management of the coil and battery was far too annoying, and the very simple device was resorted to of running a gas-pipe up the north end of the harp-shaped piece, at the end of which two stop-cocks were fitted, to which were attached flexible-rubber tubes terminating in gas-lamps convenient to hold in the hand. A set of steps was put on the east side of the casting, and a small platform which does not in any way interfere with the moving of the instrument nor with its stability, was fixed to its north end. To set the circle the instrument is brought into the meridian and set by means of the coarse divisions to within less than one degree of north polar distance of the required position, an assistant mounts upon the platform and holds the gas-lamp near the vernier, and the fine setting is accomplished by the observer seated in the observing-chair, the declination-clamp and slow-motion screw being convenient to his hand.

This method is perfectly satisfactory, and does away with all the annoyance inseparable from complicated devices.

THE TELESCOPE.

Tube.—The tube is of steel, $\frac{1}{16}$ of an inch in thickness near the ends and $\frac{1}{8}$ in the middle, and is made in three sections. It is about 32 feet in length, the middle one-third being about 31 inches in diameter. From this middle one-third the tube gradually tapers to about 28 inches at the object-end and 21 inches at the eye-end. This latter is closed by a brass plate, into which the sliding-tubes for holding the position-circle, eye-pieces, &c., fit. The photograph (Plate V) gives the best notion of the arrangement of the eye-end. At the object-end of the tube are two iron doors, about 4 inches square, which can be removed for ventilating the tube. Such experiments as have been made indicate that the difference of temperature of the air outside and inside the tube is usually not greater than 1° Fahrenheit. One of the ventilators is shown in Plate IV close to the cell of the object-glass.

Object-glass.—The object-glass is composed of an equi-convex front lens of crown-glass and a nearly plano-concave flint lens, the clear aperture being 26 English inches, and the principal focal distance of the combination being 390 inches, nearly. The radii of the three curved surfaces are each about 161 inches. The thickness of the objective at the center is about 2.87 inches. It is confined in a gun-metal cell which has adjusting-screws for collimation, etc. The objective cannot be rotated in its cell.

The glasses are free from all hurtful rings and striæ, and are of nearly perfect figure. To test their figure, the telescope, with the full aperture of 26 inches, was pointed upon *Uranus* March 10, 1874, and the eye-piece, magnifying 600 diameters, was carefully focused on the two satellites *Oberon* and *Titania*. The central

portion of the object-glass was then stopped out by a circular stop of pasteboard, 20 inches in diameter, placed approximately central over the object-glass, and the telescope again directed upon the satellites. These were seen with the same focus perfectly sharp and well defined. The series of measures of very close double stars in 1874 and 1875, by Professor NEWCOMB, and in 1875 and 1876, by Professor HALL, show also its superior defining power. The light of the telescope, as well as its defining power, may be judged of by the long series of observations of the satellite of *Neptune* and of all four satellites of *Uranus*[1] in 1873, 1874, 1875, and 1876, by the forty observations of *Hyperion* in 1875, and by the discovery of three minute and close companions to *Procyon*.

The Position-Circle and Micrometer.—The photograph (Plate V) gives a general view of the eye-end of the telescope. When it is pointed to the zenith the eye-piece is about 3 feet above the floor of the dome. The large wheel with metal spokes and a wooden circumference, (seen edgewise in Plate V,) is for the purpose of giving the telescope small motions in right ascension and north polar distance with the hand, and has been found to be very convenient. The position-circle screws into the first sliding tube and remains permanently attached to the telescope, whether the micrometer, spectroscope, or a plain eye-piece is used, in the way proposed by the late Professor WINLOCK, director of Harvard College Observatory. The micrometers, the plain eye-pieces, etc., fit into a slipping tube beyond the position-circle, and are fixed in position by a clamp-screw. The position-circle is about 8 inches in diameter, and has two graduations: The first (coarse graduation) is on its outer face, and is to single degrees. This is read by an "index" or pointer. The second (fine graduation) is to two-tenths of one degree, and is read by two verniers (marked I and II) to one one-hundredth of one degree. Reading-glasses are fitted to these verniers. The index is about 90° in angular position from each vernier. A clamp and tangent-screw is fixed to a collar which can be clamped so as to bring the clamp to any position on the limb. When once clamped it cannot be moved without altering the reading for the parallel or zero of position. Four complete turns of the tangent-screw will move the zero of the vernier over 1° on the limb of the position-circle.

There are three micrometers, one primarily for measures of position-angle and distance of faint objects, (although it serves equally well for such measures of any objects,) one principally for determining differences of right ascension and north polar distance, and one AIRY double-image micrometer. The first two of these will be described somewhat in detail, as it is believed that they have some special advantages for the purposes for which they were intended. The first of these, designed by Professor NEWCOMB, has already been briefly described by him in the introduction to the observations with the XXVI-inch Equatorial, (Washington Astronomical Observations, 1873.) Its peculiar use was to determine the angles of position and the distances of the faint satellites of *Neptune* and *Uranus* from their primaries. To this end only four wires were placed in the reticle, (so that as little light as possible might be in the field of view,) three of these being fixed and one movable. The illumination of the wires is by a lamp through the end of the micrometer-box, and hence the long wire, which is parallel

[1] Washington Astronomical Observations, 1873, Appendix I.

to the direction of the micrometer-screw and to that of the beam of light from the illuminating-lamp, is not seen under ordinary circumstances. There are two fixed wires perpendicular to this longitudinal wire, and therefore parallel to the movable micrometer-wire, which are usually designated in the observations as wire A and wire B. Wire A is at 64 revolutions and wire B at 93 revolutions, the whole range of the screw being 125 revolutions and one revolution being about 10″. The whole set of short wires is moved simultaneously by a fine screw on the outside of the box, which we may call screw A, while the micrometer-wire only is moved by the steel micrometer-screw M.

To measure an angle of position, the telescope being carried by the clock-work, the micrometer-box is turned by the hand (the verniers of the position-circle turning with it) until wire A is parallel to the line joining the centers of the planet and the satellite. The micrometer-wire may now be placed parallel and five or six seconds from wire A, and the two objects placed midway between the wires, or the measure may be made by moving the micrometer-wire so that this bisects both planet and satellite. A reading of the position-circle, usually to tenths of degrees only, gives the result of this one measure.

The zero of position is determined, when the telescope is unclamped, either by causing a star in the immediate neighborhood of the objects measured to run accurately along the short wires, or when this adjustment is nearly made, by allowing a star to enter the field of view, the telescope remaining fixed in position, and bisecting it with the movable wire near the *following* side of the field, noting the time and reading the micrometer, and again bisecting it on the *preceding* side of the field, again noting the time and reading the micrometer. In the first case the reading of the position-circle gives the zero directly; in the second it gives an approximate value, which is to be corrected from the data given by the observation.

To measure a distance, the telescope being driven by the clock-work, the micrometer-box is moved so that the vernier of the position-circle may read 90° more or less than the reading previously obtained for the position-angle, and clamped. The planet and satellite are then brought by the slow motion in right ascension near to wire A and the movable wire. Screw A, on the outside of the box, is then moved so that wire A bisects the planet's disk, and, the clock-work motion maintaining it nearly in that position, the movable wire is brought to coincide with the satellite by moving screw M. This process may be termed preliminary. The screw A is now moved so that the movable wire is *accurately* on the satellite, and after the eye is perfectly satisfied with the bisection it is quickly turned to the planet. If its disk is satisfactorily bisected the eye is again turned to the satellite, and so for several trials. Each object is examined *separately* and without any thought of the other; in practice the satellite is first examined, as it is harder to see, and then the position on the planet's disk is verified. If all is satisfactory, the whole revolutions are read from a scale on the side of the box and the fractions from the micrometer-head. If, however, the bisections of both planet and satellite are not satisfactory, the movable wire is altered in position by the screw M and the whole process repeated until a good measure is obtained. If now the reading for the coincidence of the micrometer-wire and wire A were obtained, and successive

bisections of the satellite with the micrometer-wire were made, any error peculiar to the bisecting of the satellite with the *movable wire* would remain. In practice, however, the micrometer-wire is moved to the other side of wire A and set at the proper distance, approximately. Wire A is now brought by the motion of screw A accurately upon the *satellite*, and the movable wire is brought to bisect the planet's disk. The whole process of repeated trial and rectification is now gone through with until a satisfactory bisection is attained, and the reading of the scale and micrometer-head now obtained, joined with that first read, gives a measure of *double* distance. It will be observed that in both positions of the micrometer-wire relative to wire A, the eye is occupied with but one question at a time and has simply to decide whether a single object is accurately bisected by a certain wire or not. It is not required that the eye should decide this while the hand is employed in altering the distance, but, the wires *remaining* at a given distance apart, the eye has simply to decide whether the given distance is the one required, and the final process is identically the same for both positions of the micrometer-wire. It is conceived that in this way the likelihood of constant errors is lessened. It should be noted that the final movement of the screw M is always made so that this screw acts against the springs of the micrometer.

The value of one revolution of the screw of this micrometer has been carefully determined, from 804 transits of equatorial and zenith stars on eleven different nights, to be

$$9''.9480 \pm 0''.0015.$$

Owing to the difficulty of getting a convenient bright field-illumination at the time these measures were made all the transits were observed over bright wires in a dark field, and the coincidences of the fixed and movable wires were observed in the same way. This accounts for the large probable error which, from so many transits, observed with a telescope of so great focal length with the advantage of the greater precision of black wires in a bright field, would be smaller. Professor NEWCOMB has shown (Washington Astronomical Observations, 1873, p. civ) that the value of one revolution of this screw is sensibly uniform throughout, and that the periodic inequalities are inappreciable. This micrometer has been used from the mounting of the instrument, in November, 1873, to the present time. The illumination of the wires has been generally accomplished by the aid of a hand-lamp held by an assistant, and this method has been found to be very convenient and satisfactory for the class of work hitherto done. Although means have been provided to illuminate the field of view, all observations have hitherto been made in a dark field with illuminated wires. From measures by Professor HALL, the thickness of the unilluminated wires projected against the bright disk of *Jupiter* has been found to be $0''.251$.

The second position-filar-micrometer has for its primary object the measures of differences of right ascension and north polar distance. For this purpose the reticle is arranged with three fixed wires for determination of differences of right ascension, and the micrometer-screw carries a system of five wires for measures of differences of north polar distance. The inconvenience of reading the whole revolutions from a small scale on the edge of the micrometer-box is obviated by causing the micrometer-

screw M to carry two divided heads whose planes are parallel to each other and close together. On one of these heads the decimals of a revolution are counted, and on the adjacent one whole revolutions are registered. Both heads are read by the same index or pointer, which is placed between the two. Plate V shows this micrometer detached from the telescope, and also the spectroscope and double-image micrometers, which have the same device.

A thermometer has been imbedded in the micrometer-box itself, so as to be in metallic contact with the micrometer-screw. From this thermometer the true thermal condition of the whole micrometer-box can be ascertained, and as the illumination of the wires is intended to be done by means of Geissler tubes driven by a Ruhmkorff coil, thus avoiding the heat from oil or gas lamps, it is hoped that an accurate determination of the value of the temperature co-efficient of this screw can be obtained. The micrometer-screws of both the filar micrometers were cut on the same tool; the first (Micrometer I) has 53.265 turns to the inch, the second (Micrometer II) has 53.318.

A new double-image micrometer, also by CLARK & SONS, has been furnished, which has the advantage of a larger field of view than the ordinary instruments of this construction.

Eye-pieces.—There are four negative eye-pieces, of the AIRY pattern, which fit into the slipping tube of the telescope when the micrometer is removed. Their magnifying powers and fields of view are as below.

NEGATIVE EYE-PIECES.

Designation.	Magnifying power.	Field of view.	Makers.
	Diameters.	′	
A_I	155*	25.2	Clark & Sons.
A_{II}	439*	10.5	Do.
A_{III}	863*	3.5	Do.
A_{IIII}	1,360*	2.5	Do.

* Approximate.

A BRADLEY rhomboidal micrometer and several ruled-glass scales of various patterns have been ruled for use with the telescope by Mr. WILLIAM A. ROGERS, assistant in the Harvard College observatory.

The micrometer eye-pieces (which fit either of the two filar-micrometers) are as below:—

POSITIVE EYE-PIECES.

Designation.	Magnifying power.	Field of view.	Makers.	Remarks.
	Diameters.	′		
1	173	13.2	Clark & Sons	
2	284	8.1	Kahler	
3	392	9.9	Clark & Sons	
3 A	400*	6.6	Kahler	Achromatic.
4	636	3.5	Clark & Sons	
5 A	606	4.2	Kahler	Achromatic.
6 A	888	2.3	Steinheil	Do.
7 C	761	3.2	Kahler	Crown-glass.
8 F	875	3.2	do	Flint-glass.
9	1,103	2.6	do	
10	1,282	2.1	do	
11	1,802	1.6	do	
I	390	4.9	do	Single lens.
II	585	3.2	do	Do.
III	780	2.6	do	Do.
IV	1,560	1.8	do	Do.

* Approximate.

Finders.—There are two finders, one, by CLARK & SONS, 5 inches in aperture, 72.5 inches focal length, with two eye-pieces. The one usually used has a field of view of 1° 18′, and a magnifying power of about 30 diameters. The other has a magnifying power of about 75 diameters. The second finder, by KAHLER, is situated 90° in position-angle from the first, and has an aperture of $2\frac{1}{8}$ inches, a focal length of 21 inches, and carries an eye-piece magnifying about 12 diameters, and having a field of view of over 3°. This finder is quite convenient for use when the larger one is either too high or too low for ready access. Both these instruments are very carefully made. Plate IV shows the small finder above the tube, the 5-inch finder being on the west side, and not shown. Plate V shows the eye end of the 5-inch finder and the whole of the small finder.

Spectroscope.—The instrument is provided with a star spectroscope of two 60° prisms, made, after designs by Professor NEWCOMB, by CLARK & SONS. This is shown in Plate V. It has three eye-pieces.

Dynameter.—A Ramsden dynameter has been made for use with the telescope by Mr. EDWARD KAHLER.

Clock.—A siderial clock is mounted on the east side of the dome, and connected electrically with the chronograph.

MOTIONS OF THE TELESCOPE.

The telescope being mounted on the German plan, has motion about two axes perpendicular to each other. Arrangements are provided for securing—

(*a*) A slow motion in North Polar Distance.
(*b*) A rapid motion in Right Ascension.
(*c*) A slow motion in Right Ascension.

(*a.*) The clamping in north polar distance is done by means of a long, stiff brass

rod, (shown just below the telescope-tube in Plate IV, but hidden in Plate V.) The slow motion in north polar distance is given by means of an endless rope passing round the head of a large wheel at the end of the slow-motion screw. The whole of this rope is shown in Plate IV, extending from near the eye-piece to the wheel.

(*b.*) The device for securing rapid motion of the telescope in right ascension is not completely shown in Plate IV, but most of the important portions can be seen. It consists essentially in a large cast-iron toothed wheel, having 96 teeth, (one tooth to each fifteen minutes of right ascension,) which is clamped firmly to the polar axis just above the hour-circle. Immediately below this wheel Plate IV shows a small iron pinion which turns on an axis parallel to the polar axis of the instrument. By the motion of a lever on the west side of the pier, (not shown in the photograph,) this pinion may be raised or lowered so as to be *in* or *out of gear* with the first-described wheel. This pinion is connected by a small train to a horizontal axle running east and west, which is fastened to the south end of the harp-shaped piece. The east end of this axle carries a crank, (shown in Plate IV,) and the west end carries a wheel, round whose rim an endless rope passes, which reaches nearly to the floor on the west side of the pier. If the observer wishes to set the hour-circle while he is at the microscopes of this circle, (*i. e.*, standing on the steps at the south end of the pier,) he first depresses the lever which puts the pinion in gear, and then by turning the crank shown in the photograph he causes the telescope to move in hour-angle at the rate of 15 minutes of time for each revolution of the crank. After this setting is completed the lever must be raised and the pinion thrown out of gear, in order that the driving-clock may act. More usually the rapid motion in right ascension is required in setting the telescope from the floor of the dome on the west side of the pier. The observer can depress or raise the lever for throwing the pinion in or out of gear from the floor by means of two ropes, and the motion in right ascension is effected by a pull upon the rope encircling the rim of the small wheel which is at the west end of the same axis which carries the crank.

This whole apparatus is simple and, at the same time, effective; by means of it this telescope can be reversed nearly as quickly as the 10-inch Munich telescope of the Observatory. It should be noticed that to each end of the telescope-tube a stout cotton braided line is attached, (which is shown in the photograph, Plate IV,) for the purpose of aiding in manœuvering the telescope. Some portion of this is always within reach from the floor of the dome.

(*c.*) The clamping in right ascension is done by means of a rope on the northwest corner of the pier, which passes round the head of a wheel, shown in Plate IV, between the polar axis and the telescope and close to the large wheel for rapid motion in right ascension. The slow motion in right ascension is secured by turning a wheel, shown in the photograph directly in the middle of the harp-shaped piece, and on its east side. The endless rope for giving this motion is shown at the northeast corner of the pier.

THE DRIVING-CLOCK.

The form of driving-clock adopted is the invention of Professor NEWCOMB, and was devised by him with special reference to the xxvi-inch equatorial.

It will be convenient to describe first that portion which is for the purpose of giving the requisite motion to the train, and second the portion whose office it is to

regulate the motion and to make it sensibly uniform. The driving part is mainly situated in the cellar beneath the dome. It consists, first, of a small reaction water-wheel, (the "BARKER'S Mill,") which is moved by water from the city water-pipes. This water may be turned on from the dome by means of a vertical rod at the north end of the pier. (See Plate IV.) When the water is so turned on the reaction-wheel begins to revolve, and causes a weight in the cellar to ascend. When this weight has reached a certain point the water-supply is automatically shut off, and the reaction-wheel wholly or partially ceases to turn, while the weight falls. While the first weight is falling a weight of about one-fourth or one-fifth the weight of the first is forced to ascend, and just before the first weight reaches its lowest point the water-supply is again automatically turned on and the first weight is again raised. The connection between these weights, by which one is made to rise when the other falls, and by which both weights are connected with the driving-clock and the vertical axis of the water-wheel, is that of the well-known HUYGHENS' loop.[1] The cord which forms this loop is endless and passes around *four* wheels, two horizontal and two vertical, small guide-pulleys being introduced to change direction. It first passes round a horizontal wheel on the vertical shaft of the water-wheel, from thence round a vertical wheel above and attached to the heavier driving-weight, thence round a horizontal wheel which is fixed to the vertical shaft of the driving-clock, (in the closet of the pier above the floor of the dome,) and from thence to the vertical wheel of the lighter weight, and finally back to the point of beginning.[2] By close inspection a portion of this rope may be seen in Plate V passing round the bottom of the vertical shaft of the clock just below the first toothed wheel of the train. In this way the driving-weight gives approximately uniform motion to the first wheel of the train, and from this first wheel the motion is transmitted through the wheels of the train to a vertical rod on the west side of the pier, at the top of which is the beveled wheel through which the motion is transmitted to the sector, etc. This rod is shown in Plate V inside the closet of the driving-clock.

The first wheel of the train is on the vertical axis of the conical pendulum, by means of which the regulation of the motion is obtained. On this same vertical axis is the horizontal wheel round which a portion of the HUYGHENS' loop is wound, and also a heavy horizontal fly-wheel. The fly-wheel, the vertical shaft of the pendulum, the three inclined supports of this shaft, and the pendulum itself are well shown in Plate V. The pendulum is of the conical description and makes one revolution in two seconds of time. To insure isochronism, the horizontal axis of the fork which supports the upper end of the pendulum does not pass through the center of the vertical shaft, but beyond it, at such a distance that the average inclination of the pendulum-rod corresponds to the minimum velocity of the axis. The pendulum is constrained to move nearly in a circle, but it has a slight play in a direction radial to the horizontal fly-wheel, and this play takes place in a small narrow slot, about three-quarters of an inch in length, inside of which the narrow lower end of the pendulum moves. The pendulum in moving outward in this slot pushes before it an insulated strip of platinum to which a

[1] HUYGHENS' *Horologium oscillatorium, etc., Paris*, 1673.

[2] About 95 foot-pounds per minute is required to drive the clock in its present form, but by far the largest part of this is expended in overcoming friction in the apparatus beneath the floor of the dome.

copper wire is attached, which is connected with one pole of an electro-magnet. The wire from the other pole of this magnet is connected, through contact springs, etc., with the pendulum itself, so that so long as the pendulum touches the platinum strip, *i. e.*, so long as the clock is running too fast, the electro-magnet is in action, and attracts its armature to itself. To the armature is attached a small brake or friction-pad which plays against the rim of the fly-wheel, and so long as the electro-magnet is in action the friction-pad is pressed against the rim of the fly-wheel, thus retarding the motion. The moment the pendulum drops within its proper limit the brake is released from action. The brake is set in action several times for each revolution when the clock is running well. By constant care this form of clock-work may be made to perform extremely well, but neglect of oiling for a few days causes irregularity of going. This constant care is given to it and it has usually given good satisfaction.

The Sector.—The general method of transmitting the motion of the clock-work to the polar axis through the sector is similar to that usually employed by the CLARKS. The sector will run for more than two hours continuously, and a means is provided for quickly setting it back to its first position.

CHRONOGRAPH.

The Chronograph is peculiar only in the method of regulation, which is a simple modification of the system adopted in the driving-clock. Its conical pendulum makes one revolution in one second, and it is suspended on its vertical axis just as the conical pendulum of the driving-clock of the Equatorial. To insure accurate circularity in its path, the following simple device is used: on the vertical axis of the pendulum, and below this, is placed a ring with three arms. This ring slips around on the axis, a very slight force serving to move it. The three arms are horizontal, and at an angular distance of 120° apart. The outer end of each of these light arms is bent upward, so that, seen sidewise, the arm looks somewhat like an ordinary fish-hook, with the point turned in toward the pendulum-axis. The length of these arms is so regulated that when the pendulum is moving in its proper circular orbit the lower end of it just swings inside of the points of the arms. If, from any cause, the pendulum begins to move in an ellipse, (and hence not uniformly,) it cannot move more than 120° (that is, not longer than one-third of a second) without touching one of the three arms as it swings outward. This arm will now be carried round in front of the pendulum (carrying the ring and other arms with it) until the pendulum drops inside the arm, and the whole process is repeated. For a fixed Observatory this form of Chronograph is perhaps as convenient as any other, and the regularity of the motion of the barrel leaves nothing to be desired.

OBSERVATIONS MADE WITH THE XXVI-INCH TELESCOPE.

It may not be out of place to summarize the principal work done with the xxvi-inch Telescope since its mounting in November, 1873. The instrument was in charge of Professor S. NEWCOMB, with Professor HOLDEN as assistant, from November, 1873, till June 16, 1875, when Professor HALL relieved Professor NEWCOMB.

NEPTUNE.

On November 20, 1873, the first measure of the satellite of Neptune was made, and these measures have been continued until the present time, April 20, 1876, whenever Neptune was suitably situated for observation.

In 1873 measures were made on	-	-	12 nights.
1874 do.	-	-	51 do.
1875 do.	-	-	42 do.
1876 do.	-	-	9 do.
In all	- - - - -		114 nights.

These observations may be found in the annual volumes of the United States Naval Observatory, and also in *Monthly Notices Royal Astronomical Society*, volume xxxv, page 49, from November 20, 1873, to February 10, 1874; and in *Astronomische Nachrichten*, No. 2061, Band 86, col. 321, from January 4 to February 17, 1875.

URANUS.

From January 8, 1874, all four satellites of Uranus have been observed whenever practicable.

Oberon was observed in	1874 on	- -	27 nights.
	1875 on	- -	34 do.
	1876 on	- -	19 do.
In all	- - - - - -		80 nights.
Titania was observed in	1874 on	- -	28 nights.
	1875 on	- -	32 do.
	1876 on	- -	22 do.
In all	- - - - - -		82 nights.
Umbriel was observed in	1874 on	- -	9 nights.
	1875 on		3 do.
	1876 on	- -	8 do.
In all	- - - - - -		20 nights.
Ariel was observed in	1874 on	- -	5 nights.
	1875 on	- -	4 do.
	1876 on	- -	11 do.
In all	- - - - - -		20 nights.

These observations are to be found in the annual volumes of the Naval Observatory, as well as in *Monthly Notices Royal Astronomical Society*, volume xxxv, page 49, from January 8, 1874, to May 26, 1874; and in *Astronomische Nachrichten*, No. 2061, Band 86, col. 321, from January 5 to May 28, 1875.

All of the preceding observations of the satellites of both *Uranus* and *Neptune*, which were made by Professor NEWCOMB, have been discussed by him in Appendix I to the Washington Astronomical Observations for 1873.

SATURN.

The satellites of *Saturn* have been the subject of observation since August 29, 1874.

Mimas was observed in	1874 on	- -	3 nights.
Enceladus was observed in	1874 on	- -	13 nights.
	1875 on	- -	17 do.
In all - - - - - -			30 nights.
Tethys was observed in	1874 on	- -	18 nights.
	1875 on	- -	29 do.
In all - - - - - -			47 nights.
Dione was observed in	1874 on	- -	18 nights.
	1875 on	- -	31 do.
In all - - - - - -			49 nights.
Rhea was observed in	1874 on	- -	19 nights.
	1875 on	- -	31 do.
In all - - - - - -			50 nights.
Titan was observed in	1874 on	- -	21 nights.
	1875 on	- -	42 do.
In all - - - - - -			63 nights.
Hyperion was observed in	1874 on	- -	3 nights.
	1875 on	- -	41 do.
In all - - - - - -			44 nights.
Japetus was observed in	1874 on	- -	11 nights.
	1875 on	- -	69 do.
In all - - - - - -			80 nights.

These observations may be found in detail in the Observatory volumes, and in *Monthly Notices Royal Astronomical Society*, volume xxxv, page 327, for 1874, and in *Astronomische Nachrichten*, Band 87, col. 177, for 1875.

A few measures of the ball and rings have been made, but the circumstances have not been favorable. A drawing of *Saturn*, as it appeared in September, 1875, has been made by M. L. TROUVELOT, and a reduced heliotype of the original pastel is given in Plate VI, Fig. 1. Of this and the succeeding figures it may, in general, be said that nothing is laid down which was not seen by more than one observer. The exception to this is in the case of the notches, represented on the inside of the outer ring of Saturn, which were seen by M. TROUVELOT with the 15-inch telescope of Harvard College observatory, and again in Washington, and of whose existence he has no doubt.[1]

JUPITER.

A few eclipses of the first satellite have been observed as follows:

In 1874	4 disappearances;	4	reappearances.
1875	4 do.	5	do.
In all	8 disappearances;	9	reappearances.

Eleven crayon drawings, in color, of the appearance of the markings of *Jupiter's* disk, have been made on the following dates: June 9, 10, 16, 18, 21, 23, 24, July 8, 13, 14, 16. These are described in *Monthly Notices Royal Astronomical Society*, volume xxxvi, page 13, November, 1875.

MARS.

Five crayon drawings of *Mars* have been made, on June 14, 16, 21, 23, and August 5. These are described in the paper last cited.

DOUBLE STARS.

The principal use to which the telescope has been applied has been in the study of the satellite systems of the outer planets, but on many occasions close double stars have been observed. The only system which has been continuously followed is that of *Sirius*.

Measures were made of the companion of *Sirius*—

In 1873 on	1 night.
1874 on	12 nights.
1875 on	10 do.
1876 on	14 do.
In all	37 nights.

[1] See *Proceedings American Academy of Arts and Sciences*, 1875, page 174.

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Fig. 4. ORION NEBULA.



Fig. 1. SATURN.

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Fig. 3. OMEGA NEBULA.



N.

James R. Osgood & Co., Boston

Fig. 2. ANNULAR NEBULA.

DRAWINGS MADE WITH THE XXVI-INCH EQUATORIAL IN 1875.

The observations of the companion of *Sirius*, during 1873, 1874, and 1875, may be found in *Astronomische Nachrichten*, No. 2061, Band 86, col. 321, and in the annual volumes of the Observatory.

NEBULÆ.

A study has been made of the Omega Nebula, (HERSCHEL's General Catalogue, No. 4403,) and a pastel drawing of this on a large scale has been completed by M. L. TROUVELOT. A reduced heliotype of this is given in Plate VI, Fig. 3. This drawing is described in *American Journal of Science* for May, 1876, page 341. The Annular Nebula in *Lyra* (G. C., 4447) has also been studied, and a pastel drawing of this is reproduced in Plate VI, Fig. 2. The observations upon which this depends are given in *Monthly Notices Royal Astronomical Society*, volume xxxvi, page 61, December, 1875 Preliminary studies have also been made in 1874, 1875, and 1876 of the nebula of *Orion*, (G. C., 1179,) and an uncompleted sketch of its central portion by M. TROUVELOT is given in Plate VI, Fig. 4. TEMPEL's nebula in the *Pleiades* (G. C., 768) has also been viewed occasionally, as well as a few others, notably the Trifid nebula, (G. C., 4355,) of which several sketches have been begun.

None of the figures in Plate VI are satisfactory representations of the drawings from which they were copied.

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APPENDIX II.

REPORT

ON THE

DIFFERENCE OF LONGITUDE

BETWEEN

WASHINGTON

AND

OGDEN, UTAH.

BY

J. R. EASTMAN,

PROFESSOR OF MATHEMATICS, UNITED STATES NAVY.

DIFFERENCE OF LONGITUDE BETWEEN WASHINGTON AND OGDEN, UTAH.

UNITED STATES NAVAL OBSERVATORY,
December 10, 1875.

SIR: I have the honor to present the following report of special duty performed in compliance with your orders in 1874.

This work was undertaken at the request of Lieut George M. Wheeler, United States Engineers, to determine by the telegraphic exchange of clock-signals the longitude of the observatory at Ogden, Utah.

The observations and most of the computations at this observatory were made by myself. In the computations, I received valuable assistance from Assistant A. N. Skinner.

The observations at Ogden were made by Mr. John H. Clark, and the computations by Dr. F. Kampf.

The observations for time at this observatory were made with the Transit Circle, the transits of all objects except close circumpolar stars being recorded on the chronograph sheet.

The azimuth constant was obtained on four nights from observations of Polaris by means of a closely approximate clock correction. On October 31, it was obtained from all the stars by the method of least squares.

The level and collimation constants were determined by the method usually employed in the reduction of work with the Transit Circle.

The equatorial value of the reduction of each transit thread to the *mean thread* is given in the following table:

s.	s.	s.
B_1 +12.262	C_1 +4.097	D_1 − 8.171
B_2 + 9.713	C_2 +2.054	D_2 − 9.696
B_3 + 8.159	C_3 +0.002	D_3 −12.271
	C_4 −2.052	
	C_5 −4.096	

In reading the observations from the sheets, threads C_1 and C_5 are omitted, so that, where not otherwise noted, the printed transits are those observed either at the nine threads B_1, B_2, B_3, C_2, C_3, C_4, D_1, D_2, and D_3, or at the five threads of set C.

The following table gives the observed places of the stars, the reductions, the deduced clock corrections, and the residuals.

Observations at the United States Naval Observatory.

Date.	Number.	Object.	Seconds of Transits over Wires. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean.	Instrumental Corrections.	Observed Place.	Adopted Right Ascension.	Clock Corrections.	v
1874.			s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.	s.	s.
Oct. 15	1	γ Pegasi	25.7	28.4	30.1	36.4	38.5	40.7	47.0	48.7	51.2	7 38.52	− 0.92	37.60	0 6 47.92	−49.68	−0.02
	2	β Ceti	57.2	59.9	1.6	7.9	10.2	12.4	18.7	20.3	23.0	38 10.13	− 1.25	8.88	0 37 19.19	.69	−0.01
	3	ϵ Piscium.	5.8	8.3	9.9	16.0	18.1	20.1	26.3	27.9	30.5	57 18.10	− 0.99	17.11	0 56 27.44	.67	+0.02
	4	Polaris	..	..	58.0	22.5	51.0	18.0	43.0	..	..	13 50.50	+ 21.63	12.13	1 13 22.36	+ 0.02	+0.02
	5	θ^1 Ceti	25.2	27.9	29.4	35.5	37.6	39.7	45.8	47.4	50.0	18 37.61	− 1.15	36.46	1 17 46.77	.69	+0.02
	6	η Piscium.	25.6	28.2	29.9	36.1	38.3	40.5	46.8	48.4	51.1	25 38.32	− 0.91	37.41	1 24 47.74	.67	+0.04
	7	ξ^1 Ceti	0.9	3.4	5.0	11.2	13.3	15.3	21.5	23.1	25.6	7 13.26	− 0.98	12.28	2 6 22.54	.74	0.00
	8	γ Ceti	28.1	30.6	32.1	38.3	40.4	42.3	48.5	50.0	52.7	37 40.33	− 1.03	39.30	2 36 49.52	.78	−0.02
16	9	α Andromedæ	32.4	35.2	37.0	44.0	46.3	48.6	55.6	57.5	0.4	2 46.33	− 0.74	45.59	0 1 55.58	−50.01	+0.01
	10	β Ceti	57.5	0.2	1.8	8.3	10.4	12.6	19.0	20.6	23.4	38 10.42	− 1.23	9.19	0 37 19.19	.00	+0.02
	11	ϵ Piscium.	6.0	8.7	10.3	16.5	18.5	20.5	26.7	28.2	30.9	57 18.48	− 0.98	17.50	0 56 27.45	.05	−0.04
	12	Polaris	..	..	58.0	23.5	48.0	18.5	42.0	..	..	13 50.00	+ 22.45	12.45	1 13 22.39	. .	. .
	13	θ^1 Ceti	25.4	28.2	29.7	35.8	37.9	40.0	46.2	47.7	50.4	18 37.92	− 1.14	36.78	1 17 46.78	.00	0.00
	14	η Piscium.	25.9	28.5	30.3	36.4	38.6	40.8	47.0	48.8	51.5	25 38.64	− 0.89	37.75	1 24 47.75	50.00	0.00
	15	β Arietis	21.9	24.6	26.4	32.8	35.0	37.2	43.7	45.2	47.9	48 34.97	− 0.83	34.14	1 47 44.17	49.97	+0.02
	16	ξ^1 Ceti	1.0	3.6	5.2	11.4	13.5	15.6	21.7	23.3	25.9	7 13.47	− 0.96	12.51	2 6 22.55	49.96	+0.02
20	17	ϵ Piscium.	7.2	9.9	11.5	17.5	19.7	21.8	27.9	29.4	32.0	57 19.66	− 0.97	18.69	0 56 27.46	−51.23	+0.01
	18	Polaris	17.0	3.0	6.5	..	..	..	38.5	41.0	..	13 52.82	+ 20.45	13.27	1 13 22.00	. .	. .
	19	θ^1 Ceti	26.7	29.4	31.0	37.2	39.2	41.3	47.4	49.1	51.6	18 39.21	− 1.12	38.09	1 17 46.80	.29	−0.05
	20	o Piscium.	27.4	30.1	31.7	37.9	39.9	41.9	48.2	49.7	52.2	39 39.89	− 0.96	38.93	1 38 47.73	.20	+0.04
	21	α Arietis	46.4	49.3	50.9	57.5	59.8	2.0	8.6	10.3	13.1	0 59.77	− 0.82	58.95	2 0 7.73	.22	+0.02
	22	ξ^1 Ceti	2.3	5.0	6.6	12.7	14.8	16.9	23.0	24.7	27.3	7 14.81	− 0.96	13.85	2 6 22.59	.26	−0.02
	23	γ Ceti	29.6	31.9	33.7	39.8	41.9	44.0	49.9	51.6	54.2	37 41.84	− 1.01	40.83	2 36 49.58	.25	−0.01
	24	α Ceti	24.8	27.4	29.0	35.0	37.1	39.1	45.2	46.9	49.4	56 37.10	− 1.01	36.09	2 55 44.86	.23	+0.01
29	25	ϵ Piscium.	9.0	11.8	13.3	19.5	21.5	23.5	29.7	31.4	34.0	57 21.52	− 1.09	20.43	0 56 27.48	−52.95	+0.03
	26	Polaris	..	..	4.5	31.0	59.0	25.0	51.0	..	..	13 58.10	+ 16.15	14.25	1 13 21.42	. .	. .
	27	θ^1 Ceti	28.7	31.3	32.9	39.1	41.2	43.2	49.3	50.9	53.6	18 41.13	− 1.23	39.90	1 17 46.83	53.07	−0.08
	28	η Piscium.	29.2	31.8	33.4	39.7	41.9	44.0	50.3	51.9	54.6	25 41.87	− 1.02	40.85	1 24 47.82	53.03	−0.03
	29	o Piscium.	29.4	32.0	33.6	39.7	41.8	43.9	50.0	51.7	54.3	39 41.82	− 1.08	40.74	1 38 47.79	52.95	+0.06
	30	β Arietis	25.2	27.8	29.5	36.0	38.2	40.5	46.9	48.6	51.3	48 38.22	− 0.97	37.25	1 47 44.29	52.96	−0.05
	31	α Arietis	48.5	51.3	52.9	59.5	1.8	4.0	10.7	12.4	15.1	1 1.80	− 0.95	0.85	2 0 7.83	53.02	0.00
	32	ξ^1 Ceti	4.4	7.1	8.6	14.7	16.9	19.0	25.0	26.7	29.3	7 16.86	− 1.09	15.77	2 6 22.69	53.08	−0.05
31	33	γ^2 Ursæ Minoris,S.P.	9.4	18.0	23.0	42.9	49.8	56.7	16.4	21.4	30.0	21 49.73	− 2.76	46.97	3 20 53.37	. .	. .
	34	η Tauri	44.2	47.0	48.7	55.4	57.5	59.7	6.6	8.0	11.0	40 57.57	− 0.70	56.87	3 40 3.40	−53.47	−0.01
	35	ζ Persei	56.4	59.3	1.0	8.3	10.7	13.1	20.4	22.1	25.0	47 10.70	− 0.60	10.10	3 46 16.65	.45	+0.03
	36	γ Tauri	22.4	25.0	26.7	33.0	35.2	37.4	43.6	45.3	47.9	13 35.17	− 0.79	34.38	4 12 40.91	.47	+0.01
	37	ϵ Tauri	0.5	3.3	4.8	11.2	13.4	15.5	22.0	23.7	26.4	22 13.42	− 0.76	12.66	4 21 19.11	.55	−0.07
	38	α Tauri	26.5	29.1	30.8	37.1	39.3	41.4	47.6	49.4	52.0	29 39.24	− 0.79	38.45	4 28 44.94	51	−0.03
	39	9 Camelopardalis	1.4	7.8	11.5	26.4	31.9	36.8	51.7	55.5	2.0	42 31.67	+ 0.31	31.98	4 41 38.51	. .	. .
	40	ι Aurigæ	30.6	33.6	35.5	42.8	45.3	47.7	54.9	56.8	59.8	49 45.22	− 0.58	44.64	4 48 51.16	.48	0.00
	41	11 Orionis.	7.0	9.7	11.4	17.7	19.8	22.0	28.3	29.9	32.5	58 19.80	− 0.79	19.01	4 57 25.55	.46	+0.02
	42	ϵ Ursæ Minoris,S.P.	..	..	29.6	45.0	0.0	15.0	45.0	56.0	15.4	59 44.67	− 5.17	39.50	4 58 46.04	. .	. .
	43	β Orionis	14.0	16.6	18.2	24.5	26.5	28.6	34.7	36.3	38.8	9 26.47	− 1.03	25.44	5 8 31.97	−53.47	+0.01

No. 18. Observed on B and D_1 and D_2.
No. 42. Observed on C_4, C_3, C_2, C_1, and B.

Constants.

Date.	*a*	*b*	*c*
1874.	s.	s.	s.
October 15.5	− 1.09	− 0.47	− 0.01
16.5	− 1.09	− 0.45	− 0.01
20.5	− 1.05	− 0.46	− 0.02
29.5	− 1.06	− 0.49	− 0.11
31.5	− 1.04	− 0.39	+ 0.01

Clock Corrections and Rates.

Date.	Sidereal Time.	Corrections.	Hourly Rate.
1874.	h. m.	s. s.	s.
October 15	1 40	− 49.717 ± 0.006	− 0.040
16	1 40	− 49.986 ± 0.006	+ 0.026
20	1 50	− 51.240 ± 0.008	+ 0.004
29	2 0	− 53.025 ± 0.013	− 0.042
31	3 30	− 53.480 ± 0.008	− 0.003

Assuming that the Transit Circle was very steady in position (see constants) during the progress of the work, the probable errors of the corrections given have been derived simply from the consideration of the clock corrections.

OBSERVATIONS AT OGDEN.

The following description of the observatory at Ogden and its location was furnished by Lieut. G. M. Wheeler:

"The observatory is located upon a low rolling mesa about 150 feet above the surface of the Weber River, and approximately one-eighth of a mile distant from the track of the Utah Central Railroad, and three-fourths of a mile from the depot of the Union Pacific Railroad. The building consists of three observing-rooms, the middle one being the dome-room. It has a stone foundation, brick superstructure. The western room contains two transit instruments mounted upon heavy stone piers, and all longitude determinations are referred to the center line of the most easterly one. The second instrument, placed upon the western one, is used for latitude observations, and for comparison of observations in the determination of personal equation.

"The valley of the Weber River has but little fall in this locality. A few rolling, broken mesas to the northeast and southeast form a noticeable feature. The Wasatch range, a heavy mass of mountains, lies to the east of the meridian of this place, the northerly part of its westerly deflection crossing the meridian line through the observing pier first mentioned.

"The transit instrument used was Würdeman No. 29, a new one, made expressly for this observatory.

"The chronometer used on October 15 was Negus No. 1511; on all other nights, Negus No. 1491 was used; both break circuit chronometers.

"A chronographic record was kept of all observations.

"The first set of time determinations is excluded from the mean corrections adopted for October 15 and 16, because the chronometer was taken from its accustomed stand to the railroad telegraph office for the purpose of exchanging signals with the distant station.

"The latitude of the observing pier, as derived from Dr. Kampf's observations in 1873, is $+41^\circ\ 13'\ 8''.65 \pm 0''.022$."

The observations for time, the reductions, and the deduced chronometer corrections and rates are given as furnished by Lieutenant Wheeler, in the following tables.

Observations at Ogden.

Date.	Clamp.	Names of Stars.	Observed Transit Corrected for Rate.	Aa	Bb	Cc	Corrected Transit.	AR	Corrections of Chronometer.	Normal equations.
1874.			h. m. s.	s.	s.	s.	s.	s.	m. s.	
Oct. 15	W.	α Lyræ	18 38 58.02	+0.02	−0.09	0.00	57.95	41.08	−6 16.87	$o = -\ 0.94 + 15.00\,\delta t + 1.59\,a - 2.11\,c$
		β Lyræ	51 43.50	+0.04	−0.08	−0.01	43.45	26.62	16.83	$o = -\ 5.06 + 1.59\,\delta t + 19.40\,a - 8.41\,c$
		50 Draconis . . .	56 40.70	−0.57	−0.19	−0.02	39.92	22.86	17.06	$o = +\ 1.99 - 2.11\,\delta t - 8.41\,a + 57.30\,c$
		γ Lyræ	19 0 31.75	+0.05	−0.06	0.00	31.74	14.89	16.85	$a = +\ 0^s.260c \quad = +\ 0^s.005$ for E.
		ζ Aquilæ . . .	5 55.50	+0.12	−0.05	−0.01	55.56	38.50	17.06	
		ι Lyræ	9 6.26	+0.03	−0.05	−0.01	6.23	49.35	16.88	
		d Sagittarii . . .	16 34.68	+0.24	−0.02	0.00	34.90	17.77	17.13	
	E.	τ Draconis . . .	24 13.11	−0.47	+0.15	+0.02	12.81	56.14	16.67	
		β Cygni	31 56.40	+0.07	+0.05	+0.01	56.53	39.74	16.79	
		κ Aquilæ . . .	36 25.44	+0.20	+0.05	0.00	25.69	8.68	17.01	
		γ Aquilæ . . .	46 34.71	+0.14	+0.09	0.00	34.94	17.88	17.06	
		α Aquilæ . . .	50 56.71	+0.14	+0.10	+0.01	56.96	39.92	17.04	
		ϵ Draconis . . .	54 51.90	−0.36	+0.38	+0.01	51.93	34.63	17.30	
		γ Sagittarii . . .	59 27 62	+0.10	+0.15	+0.01	27.88	10.87	17.01	
		3 Ursæ Maj., L. C.	20 6 35.43	+0.68	−0.14	−0.02	35.95	19.03	−6 16.92	
		SECOND SERIES.								
	E.	β Cephei . . .	21 33 19.68	−0.24	+0.18	0.00	19.62	2.52	−6 17.10	$o = +\ 0.01 + 7.00\,\delta t - 1.89\,a$
		ξ Aquarii . . .	37 21.97	+0.13	+0.04	0.00	22.14	5.21	16.93	$o = -\ 1.52 - 1.89\,\delta t + 9.57\,a$
		ϵ Pegasi . . .	44 18.96	+0.09	+0.06	0.00	19.11	2.26	16.95	$a = +\ 0^s.167$ for W.
		11 Cephei . . .	46 22.27	−0.25	+0.21	0.00	22.23	5.36	16.87	$o = +\ 0.48 + 7.00\,\delta t + 3.66\,a$
		μ Capricorni . .	52 45.08	+0.14	+0.05	0.00	45.27	28.34	16.93	$o = +\ 2.59 + 3.66\,\delta t + 21.05\,a$
		79 Draconis . . .	57 36.13	−0.30	+0.26	0.00	36.09	19.18	16.91	$a = -\ 0^s.122$
		α Aquarii . . .	22 5 38.16	+0.11	+0.07	0.00	38.34	21.34	17.00	Adopted $c = 0^s.00$
	W.	ζ Cephei . . .	12 47.87	+0.06	0.00	0.00	47.93	30.95	16.98	
		θ Aquarii . . .	16 31.10	−0.10	−0.01	0.00	30.99	13.85	17.14	
		γ Aquarii . . .	21 28.87	−0.08	−0.03	0.00	28.76	11.58	17.18	
		π Aquarii . . .	25 10.40	−0.08	−0.05	0.00	10.27	53.21	17.06	
		9 Draconis, L. C. .	30 38.63	−0.46	+0.18	0.00	38.35	21.58	16.77	
		226 Cephei . . .	35 22.08	+0.27	−0.23	0.00	22.12	5.36	16.76	
		ξ Pegasi . . .	41 30.52	−0.06	−0.04	0.00	30.42	13.28	−6 17.14	
		THIRD SERIES.								
	W.	ι Ceti	0 19 21.14	−0.07	−0.01	−0.02	21.04	3.63	−6 17.41	$o = +\ 0.08 + 12.00\,\delta t - 0.60\,a - 2.05\,c$
		12 Ceti	29 57.01	−0.06	−0.01	−0.02	56.92	39.64	17.28	$o = +\ 0.67 - 0.60\,\delta t + 8.48\,a + 5.41\,c$
		ξ Cassiopeæ . .	36 18.20	+0.03	−0.02	−0.03	18.18	0.95	17.23	$o = -\ 0.25 - 2.05\,\delta t + 5.41\,a + 37.65\,c$
		α Cassiopeæ . .	39 42.71	+0.04	−0.01	−0.03	42.71	25.56	17.15	$a = -\ 0^s.092$
		21 Cassiopeæ . .	43 43.63	+0.18	0.00	−0.07	43.74	26.57	17.17	$c = +\ 0^s.019$
		μ Andromedæ . .	56 6.37	−0.01	0.00	−0.03	6.33	48.90	17.43	
	E.	ϵ Piscium . . .	1 2 44.65	−0.05	+0.05	+0.02	44.67	27.43	17.24	
		β Andromedæ . .	9 1.19	−0.01	+0.07	+0.03	1.28	44.18	17.10	
		τ Piscium . . .	11 3.85	−0.02	+0.06	+0.02	3.91	46.76	17.15	
		ν Piscium . . .	18 53.06	−0.03	+0.04	+0.02	53.09	35.86	17.23	
		θ^1 Ceti	24 4.23	−0.07	+0.02	+0.02	4.20	46.75	17.45	
		38 Cassiopeæ . .	27 14.99	+0.12	+0.05	+0.05	15.21	57.95	−6 17.26	

Observations at Ogden—Continued.

Date.	Clamp.	Names of Stars.	Observed Transit Corrected for Rate.	*Aa*	*Bb*	*Cc*	Corrected Transit.	*R*.	Corrections of Chronometer.	Normal equations.
1874.			h. m. s.	s.	s.	s.	s.	s.	m. s.	
Oct. 16	E.	α Lyræ	18 38 43.03	+0.02	+0.19	+0.10	43.34	41.06	−6 2.28	$o = +\ 1.20 + 15.00\,\delta t + 4.82\,a - 0.74\,c$
		β Lyræ	51 28.63	+0.06	+0.18	+0.10	28.97	26.60	2.37	$o = -\ 5.73 + 4.82\,\delta t + 15.62\,a + 18.22\,c$
		σ Sagittarii . . .	53 31.09	+0.34	+0.06	+0.09	31.58	29.16	2.42	$o = -\ 9.58 - 0.74\,\delta t + 18.22\,a + 43.01\,c$
		γ Lyræ	19 0 16.87	+0.06	+0.18	+0.10	17.21	14.85	2.36	
		ζ Aquilæ . . .	5 40.57	+0.16	+0.15	+0.08	40.96	38.49	2.47	$a = +\ 0^s.330$
		ι Lyræ	8 51.31	+0.03	+0.20	+0.10	51.64	49.34	2.30	$c = +\ 0^s.080$
		δ Sagittarii . . .	16 19.79	+0.30	+0.09	+0.08	20.26	17.76	2.50	
	W.	τ Draconis . . .	23 59.73	−0.60	−0.17	−0.28	58.68	56.06	2.62	
		β Cygni	31 41.90	+0.09	−0.06	−0.09	41.84	39.72	2.12	
		κ Aquilæ . . .	36 10.95	+0.25	−0.01	−0.08	11.11	8.67	2.44	
		γ Aquilæ . . .	46 20.09	+0.17	0.00	−0.08	20.18	17.87	2.31	
		α Aquilæ . . .	50 42.15	+0.18	+0.02	−0.08	42.27	39.91	2.36	
		ε Draconis . . .	54 37.49	−0.46	+0.11	−0.23	36.91	34.57	2.34	
		γ Sagittarii . . .	59 13.12	+0.13	+0.05	−0.08	13.22	10.87	2.35	
		3 Ursæ Maj., L. C.	20 6 20.57	+0.86	−0.04	+0.22	21.61	19.11	−6 2.50	
		SECOND SERIES.								
	W.	ι Pegasi . . .	21 22 20.05	+0.02	+0.06	−0.05	20.08	17.74	−6 2.34	$o = +\ 0.33 + 15.00\,\delta t + 2.39\,a - 8.87\,c$
		β Aquarii . . .	31 0.63	+0.04	+0.03	−0.05	0.65	58.06	2.59	$o = -\ 0.99 + 2.39\,\delta t + 31.06\,a - 11.49\,c$
		β Cephei . . .	33 5.40	−0.07	+0.05	−0.15	5.23	2.46	2.77	$o = -\ 3.30 - 8.87\,\delta t - 11.49\,a + 76.52\,c$
		ξ Aquarii . . .	37 7.62	+0.04	0.00	−0.05	7.61	5.20	2.41	
		ε Pegasi . . .	44 4.66	+0.03	−0.02	−0.05	4.62	2.25	2.37	$a = +\ 0^s.051$
		11 Cephei . . .	46 8.24	−0.07	−0.08	−0.15	7.94	5.30	2.64	$c = +\ 0^s.051$
		μ Capricorni . .	52 30.98	+0.04	−0.03	−0.05	30.94	28.33	2.61	
		79 Draconis . . .	57 22.14	−0.09	−0.14	−0.17	21.74	19.12	2.62	
	E.	α Aquarii . . .	22 5 23.84	+0.03	+0.09	+0.05	24.01	21.33	2.68	
		ζ Cephei . . .	12 33.28	−0.03	+0.21	+0.09	33.55	30.92	2.63	
		θ Aquarii . . .	16 16.34	+0.04	+0.07	+0.05	16.50	13.84	2.66	
		γ Aquarii . . .	21 14.20	+0.03	+0.08	+0.05	14.36	11.57	2.79	
		π Aquarii . . .	24 55.70	+0.03	+0.08	+0.05	55.86	53.20	2.66	
		9 Draconis, L. C. .	30 24.57	+0.19	−0.20	−0.21	24.35	21.66	2.69	
		226 Cephei . . .	36 7.43	−0.11	+0.33	+0.20	7.85	5.30	−6 2.55	
		THIRD SERIES.								
	E.	α Andromedæ . .	0 7 57.79	+0.19	+0.23	+0.01	58.22	55.56	−6 2.66	$o = +\ 1.83 + 13.00\,\delta t - 2.07\,a + 1.36\,c$
		22 Andromedæ . .	9 51.91	−0.07	+0.30	+0.02	52.16	49.71	2.45	$o = -\ 9.00 - 2.07\,\delta t + 12.02\,a - 1.40\,c$
		γ Pegasi . . .	12 50.09	+0.35	+0.19	+0.01	50.64	47.92	2.72	$o = +\ 0.50 + 1.36\,\delta t - 1.40\,a + 49.22\,c$
		Groombridge 29.	15 15.09	−1.80	+0.72	+0.05	14.06	11.24	2.82	$a = +\ 0^s.746$
		ι Ceti	19 5.66	+0.59	+0.13	+0.01	6.39	3.63	2.76	$c = +\ 0^s.912$
		12 Ceti	29 41.66	+0.54	+0.14	+0.01	42.35	39.64	2.71	
		ζ Cassiopeæ . .	36 3.58	−0.26	+0.32	+0.02	3.66	0.95	2.71	
	W.	α Cassiopeæ . .	39 28.30	−0.34	+0.09	−0.02	28.03	25.56	2.47	
		21 Cassiopeæ . .	43 30.70	−1.51	+0.12	−0.04	29.27	26.57	2.70	
		μ Andromedæ . .	55 51.77	+0.06	+0.05	−0.02	51.86	48.89	2.97	
		ε Piscium . . .	1 2 29.88	+0.43	+0.03	−0.01	30.33	27.43	2.90	
		β Andromedæ . .	8 46.85	+0.10	+0.04	−0.01	46.98	44.18	2.80	
		τ Piscium . . .	10 49.27	+0.18	+0.02	−0.01	49.46	46.76	−6 2.70	
Oct. 20	E.	α Lyræ	18 38 49.06	+0.10	+0.13	+0.28	49.57	40.97	−6 8.60	$o = +\ 3.45 + 15.00\,\delta t + 0.61\,a + 3.88\,c$
		β Lyræ	51 34.61	+0.29	+0.09	+0.26	35.25	26.51	8.74	$o = -14.70 + 0.61\,\delta t + 9.44\,a - 6.22\,c$
		γ Lyræ	19 0 22.73	+0.31	+0.07	+0.25	23.36	14.79	8.57	$o = +\ 3.12 + 3.88\,\delta t - 6.22\,a + 41.94\,c$
		ζ Aquilæ . . .	5 46.03	+0.83	+0.04	+0.22	47.12	38.42	8.70	$a = +\ 1^s.721$
		ι Lyræ	8 57.37	+0.19	+0.02	+0.26	57.84	49.24	8.60	$c = +\ 0^s.214$
		δ Sagittarii . . .	16 24.47	+1.58	−0.01	+0.23	26.27	17.69	8.58	
		δ Draconis . . .	18 40.32	−1.97	−0.12	+0.56	38.79	30.18	8.61	
		τ Draconis . . .	24 7.03	−3.13	−0.15	+0.74	4.49	55.73	8.76	
	W.	β Cygni	31 48.09	+0.47	−0.14	−0.24	48.18	39.64	8.54	
		κ Aquilæ . . .	36 16.43	+1.21	−0.09	−0.22	17.33	8.60	8.73	
		γ Aquilæ . . .	46 25.94	+0.89	−0.12	−0.22	26.49	17.80	8.69	
		α Aquilæ . . .	50 47.96	+0.93	−0.13	−0.22	48.54	39.84	−6 8.70	

Observations at Ogden—Continued.

Date.	Clamp.	Names of Stars.	Observed Transit Corrected for Rate.	*Aa*	*Bb*	*Cc*	Corrected Transit.	*R.*	Corrections of Chronometer.	Normal equations.
1874.			h. m. s.	s.	s.	s.	s.	s.	m. s.	
Oct. 20	W.	ε Draconis . . .	19 54 46.36	−2.41	−0.41	−0.62	42.92	34.29	−6 8.63	
		γ Sagittarii . . .	59 19.10	+0.69	−0.17	−0.23	19.39	10.79	8.60	
		ε Aquilæ . . .	20 4 8.94	+0.98	−0.13	−0.22	9.57	0.88	−6 8.69	
		SECOND SERIES.								
	W.	12 Ceti	0 26 47.73	+1.24	−0.15	−0.21	48.61	39.67	−6 8.94	$o = +6.38 + 13.00\,\delta t - 1.78\,a - 9.00\,c$
		ζ Cassiopeæ . .	36 11.10	−0.60	−0.33	−0.34	9.83	0.96	8.87	$o = -16.65 - 1.78\,\delta t + 8.79\,a + 6.57\,c$
		α Cassiopeæ . .	39 35.96	−0.77	−0.36	−0.36	34.47	25.55	8.92	$o = -21.01 - 9.00\,\delta t + 6.57\,a + 42.75\,c$
		21 Cassiopeæ . .	43 40.78	−3.47	−0.65	−0.75	35.91	26.52	9.39	$a = +1^s.720$
		Bradley 82 . .	49 21.23	−1.46	−0 42	−0.46	18.89	9.56	9.33	$c = +0^s.203$
		μ Andromedæ . .	55 58.43	+0.14	−0.25	−0.26	58.06	48.90	9.16	
		ε Piscium . . .	1 2 35.88	+0.98	−0.17	−0.20	36.49	27.44	9.05	
		β Andromedæ . .	8 53.40	+0.22	−0.24	−0.25	53.13	44.18	8.95	
		τ Piscium . . .	10 55.68	+0.41	−0.23	−0.23	55.63	46.76	8.87	
	E.	υ Piscium . . .	18 44.42	+0.48	−0.03	+0.23	45.10	35.86	9.24	
		θ¹ Ceti	23 54.75	+1.34	−0.02	+0.21	56.28	46.78	9.50	
		38 Cassiopeæ . .	28 8.73	−2.36	−0.13	+0.58	6.82	57.98	8.84	
		η Piscium . . .	30 56.19	+0.79	−0.06	+0.21	57.13	47.70	−6 9.43	
Oct. 29	E.	ε Pegasi . . .	21 44 24.07	+0.34	−0.05	+0.15	24.51	2.08	−6 22.43	$o = -0.93 + 13.00\,\delta t + 4.46\,a + 7.92\,c$
		μ Capricorni . .	52 50.05	+0.54	−0.03	+0.45	50.71	28.16	22.55	$o = -11.35 + 4.46\,\delta t + 25.98\,a - 28.96\,c$
		79 Draconis . . .	57 42.26	−1.16	−0.23	+0.50	41.37	18.29	23.08	$o = +11.81 + 7.92\,\delta t - 28.96\,a + 59.16\,c$
		α Aquarii . . .	22 5 43.42	+0.43	−0.06	+0.14	43.93	21.19	22.74	$a = +0^s.638$
		ζ Cephei . . .	12 53.40	−0.33	−0.19	+0.27	53.15	30.54	22.61	$c = +0^s.144$
		θ Aquarii . . .	16 35.88	+0.50	−0.07	+0.15	36.46	13.70	22.76	
		γ Aquarii . . .	21 33.73	+0.43	−0.09	+0.14	34.21	11.43	22.78	
		π Aquarii . . .	25 15.34	+0.41	−0.09	+0.14	15.80	53.07	22.73	
		9 Draconis, L. C. .	30 43.41	+2.40	+0.28	−0.61	45.48	22.80	22.68	
		226 Cephei . . .	36 28.12	−1.41	−0.46	+0.58	26.83	4.44	22.39	
	W.	ζ Pegasi . . .	41 36.25	+0.33	−0.17	−0.15	36.26	13.14	23.12	
		η Pegasi . . .	43 31.16	+0.15	−0.22	−0.17	30.92	8.17	22.75	
		λ Pegasi . . .	46 53.23	+0.21	−0.20	−0.15	53.09	30.16	−6 22.93	
		SECOND SERIES.								
	W.	μ Andromedæ . .	0 56 12.21	0.00	−0.25	−0.22	11.74	48.92	−6 22.82	$o = -1.68 + 17.00\,\delta t + 0.10\,a - 4.86\,c$
		ε Piscium . . .	1 2 50.57	−0.03	−0.16	−0.17	50.21	27.46	22.75	$o = +1.08 + 0.10\,\delta t + 7.46\,a - 4.42\,c$
		β Andromedæ . .	9 7.26	0.00	−0.24	−0.21	6.81	44.22	22.59	$o = -6.86 - 4.86\,\delta t - 4.42\,a + 42.97\,c$
		τ Piscium . . .	11 9.81	−0.01	−0.22	−0.20	9.38	46.80	22.58	$a = -0^s.045$
		υ Piscium . . .	18 59.03	−0.01	−0.19	−0.19	58.64	35.91	22.73	$c = +0^s.172$
		θ¹ Ceti	24 10.05	−0.04	−0.10	−0.17	9.74	46.81	22.93	
		38 Cassiopeæ . .	28 21.66	+0.06	−0.40	−0.49	20.83	58.01	22.82	
		η Piscium . . .	31 10.97	−0.02	−0.14	−0.18	10.63	47.75	22.88	
		υ Persei	36 42.87	+0.01	−0.22	−0.26	42.40	19.64	22.76	
		φ Persei	42 13.41	+0.01	−0.24	−0.27	12.91	50.22	22.69	
		ο Piscium . . .	45 10.89	−0.02	−0.14	−0.17	10.56	47.81	22.75	
	E.	ε Cassiopeæ . .	51 48.13	+0.04	−0.16	+0.38	48.39	25.65	22.74	
		β Arietis . . .	54 6.94	−0.02	−0.08	+0.18	7.02	44.26	22.76	
		50 Cassiopeæ . .	59 11.14	+0.07	−0.25	+0.55	11.51	48.70	22.81	
		γ Andromedæ . .	2 2 36.47	0.00	−0.14	+0.23	36.56	13.89	22.67	
		α Arietis . . .	6 30.37	−0.01	−0.10	+0.18	30.44	7.81	22.63	
		ξ¹ Ceti	12 45.46	−0.02	−0.09	+0.17	45.52	22.64	−6 22.88	
Oct. 31	W.	226 Cephei . . .	22 36 28.93	+0.43	−0.43	−0.64	28.29	4.30	−6 23.99	For W. $o = -2.94 + 5.00\,\delta t - 3.12\,a$
		ζ Pegasi . . .	41 38.06	−0.10	−0.11	−0.16	37.69	13.12	24.57	$o = +2.29 - 2.12\,\delta t + 6.29\,a$
		η Pegasi . . .	43 33.04	−0.04	−0.14	−0.18	32.68	8.14	24.54	$a = -0^s.194$
		λ Pegasi . . .	46 54.96	−0.06	−0.14	−0.17	54.59	30.14	24.45	
		ι Cephei . . .	51 38.61	+0.18	−0.29	−0.38	38.12	13.70	24.42	For E. $o = -1.60 + 5.00\,\delta t + 0.30\,a$
	E.	α Pegasi . . .	23 4 56.72	−0.70	−0.05	+0.16	56.13	31.71	24.42	$o = +19.99 + 0.30\,\delta t + 13.48\,a$
		π Cephei . . .	10 16.58	+3.12	−0.19	+0.60	20.11	55.77	24.34	$a = -1^s.492$
		ο Cephei . . .	19 52.73	+1.72	−0.19	+0.41	54.67	29.97	24.70	Adopted $c = +0^s.158$ for E.
		υ Pegasi . . .	25 33.13	−0.52	−0.09	+0.17	32.69	8.17	24.52	
		λ Draconis, L. C. .	30 24.30	−4.07	+0.09	−0.46	19.86	55.39	−6 24.47	

Observations at Ogden—Continued.

Date.	Clamp.	Names of Stars.	Observed Transit Corrected for Rate.	*Aa*	*Bb*	*Cc*	Corrected Transit.	*R*	Corrections of Chronometer.	Normal equations.
1874.			h. m. s.	"	"	"	"	"	m.	
Oct. 31	E.	ε Cassiopeæ . .	1 51 48.86	+1.16	−0.20	+0.35	50.17	25.66	−6 24.51	$o = -2.38 + 11.00\,\delta t - 0.76\,a + 2.81\,c$
		β Arietis . . .	54 9.25	−0.54	−0.10	+9.17	8.78	44.27	24.51	$o = +9.44 - 0.76\,\delta t + 6.15\,a - 4.38\,c$
		50 Cassiopeæ . .	59 10.91	+2.30	−0.22	+0.51	13.50	48.71	24.79	$o = -11.48 + 2.81\,\delta t - 4.38\,a + 32.07\,c$
		γ Andromedæ . .	2 2 38.33	+0.01	−0.08	+0.21	38.47	13.90	24.57	
		α Arietis . . .	6 32.72	−0.47	−0.05	+0.17	32.37	7.83	24.54	$a = -1^s.413$
		ξ^1 Ceti	12 47.97	−0.78	−0.04	+0.16	47.31	22.66	24.65	$c = +0^s.158$
	W.	ε Cassiopeæ . .	25 11.92	+1.55	−0.57	−0.40	12.50	47.90	24.60	
		ξ^2 Ceti	27 56.85	−0.78	−0.21	−0.16	55.70	30.98	24.72	
		δ Ceti	39 30.93	−0.93	−0.19	−0.16	29.65	4.86	24.79	
		θ Persei	42 5.14	+0.28	−0.38	−0.24	4.80	40.29	24.51	
		μ Ceti	44 37.06	−0.75	−0.22	−0.16	35.93	11.30	−6 24.63	

N. B.—The instrument had to be taken from the pier every day on account of the carpenter being at work in the observing-room.

Corrections and Rates of the Ogden Chronometer.

Chronometer.	Date.	Local Sidereal Time.	Correction.	Hourly Rate.
	1874.	h.	h. m. s.	s.
Negus 1511 . .	Oct. 15	23.40	− 0 6 17.120	+ 0.0533
Negus 1491 . .	Oct. 16	23.23	− 0 6 2.660	+ 0.0801
	20	22.08	8.883	+ 0.0634
	29	23.81	22.742	+ 0.0367
	31	0.58	24.530	+ 0.0367

EXCHANGE OF SIGNALS.

The signals from Washington to Ogden were usually made by the clock. When the beats of the clock and the Ogden chronometer were nearly or quite in coincidence, arbitrary signals were sent by the observer, with the ordinary observing-key, at intervals of about ten seconds.

Signals from Ogden to Washington were usually made by the break-circuit chronometer, but when necessary arbitrary signals were sent with the observer's key, all signals being recorded, of course, on the chronographs at both stations.

On each night, repeaters were in the telegraph line at Pittsburgh, Chicago, Omaha, and Cheyenne.

October 15, signals W. to O., used the mean of 19 clock signals.
October 15, signals O. to W., used the mean of 19 chronometer signals.
October 16, signals W. to O., used the mean of 16 arbitrary signals.
October 16, signals O. to W., used the mean of 15 arbitrary signals.
October 20, signals W. to O., used the mean of 19 clock signals.
October 20, signals O. to W., used the mean of 16 arbitrary signals.
October 29, signals W. to O., used the mean of 14 arbitrary signals.
October 29, signals O. to W., used the mean of 12 arbitrary signals.
October 31, signals W. to O., used the mean of 14 arbitrary signals.
October 31, signals O. to W., used the mean of 19 chronometer signals.

Comparison of Signals.

Date.	Signals. Direction.	Signals. Station.	Clock and Chron. Time.	Correction.	Corrected Time.	Difference of Time. W. to O.	Difference of Time. O. to W.	Wave and Armature Time.
			h. m. s.	m. s.	h. m. s.	h. m. s.	h. m. s.	s.
Oct. 15	W. to O.	W.	1 38 30.526	— 0 49.716	1 37 40.810			
		O.	23 24 10.829	— 6 17.121	23 17 53.708	2 19 47.102		
								0.481
	O. to W.	W.	1 59 30.700	— 0 49.730	1 58 40.970			
		O.	23 45 10.526	— 6 17.139	23 38 53.387		2 19 47.583	
16	W. to O.	W.	2 1 36.707	— 0 49.977	2 0 46.730			
		O.	23 47 2.271	— 6 2.704	23 40 59.567	2 19 47.163		
								0.528
	O. to W.	W.	1 37 44.204	— 0 49.987	1 36 54.217			
		O.	23 23 9.199	— 6 2.673	23 17 6.526		2 19 47.691	
20	W. to O.	W.	2 20 30.526	— 0 51.238	2 19 39.288			
		O.	0 6 1.137	— 6 9.011	23 59 52.126	2 19 47.162		
								0.527
	O. to W.	W.	1 50 56.541	— 0 51.240	1 50 5.301			
		O.	23 36 26.592	— 6 8.980	23 30 17.612		2 19 47.689	
29	W. to O.	W.	2 39 36.161	— 0 53.053	2 38 43.108			
		O.	0 25 18.561	— 6 22.764	0 18 55.797	2 19 47.311		
								0.546
	O. to W.	W.	2 46 49.998	— 0 53.058	2 45 56.940			
		O.	0 32 31.852	— 6 22.769	0 26 9.083		2 19 47.857	
31	W. to O.	W.	3 38 25.464	— 0 53.480	3 37 31.984			
		O.	1 24 9.350	— 6 24.560	1 17 44.790	2 19 47.194		
								0.515
	O. to W.	W.	3 31 36.159	— 0 53.480	3 30 42.679			
		O.	1 17 19.526	— 6 24.556	1 10 54.970		2 19 47.709	
						2 19 47.186	2 19 47.706	0.519
						2 19 47.446		

No opportunity occurred for determining the *relative* personal equation between Mr. Clark and myself; and as the plan for obtaining *absolute* personal equations failed on account of the lack of the proper instruments, the above result is affected by the error of our personal equations.

The Transit Circle is $0^s.036$ west of the center of the dome of the observatory. Applying this correction, we have the center of the eastern pier in the transit room of the Ogden observatory

$$2^h\ 19^m\ 47^s.41$$

west of the center of the dome of the United States Naval Observatory.

Much of the success in transmitting signals was due to the skill of Mr. M. Marean, of the Western Union Telegraph office, who assisted with his usual zeal and kindness.

Very respectfully, your obedient servant,

J. R. EASTMAN,
Professor of Mathematics, U. S. N.

Rear-Admiral C. H. DAVIS, U. S. N.,
Superintendent U. S. Naval Observatory.

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FEB 6 - 1939

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